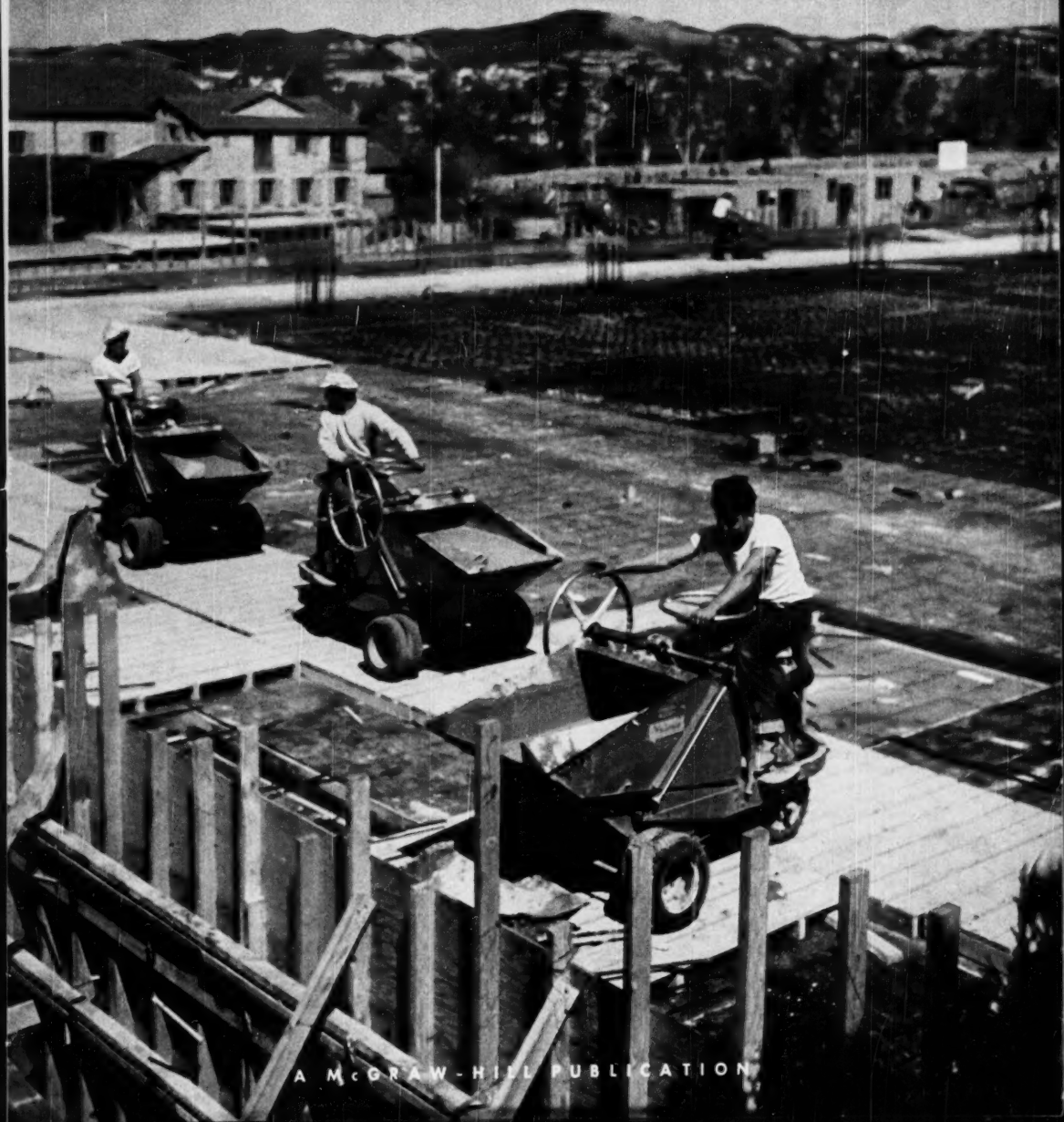


# CONSTRUCTION

## METHODS AND EQUIPMENT

August 1950

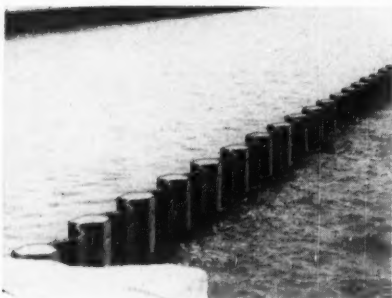


A MCGRAW-HILL PUBLICATION

**DRIVE IT  
PULL IT  
RE-DRIVE IT**

# **INLAND SHEET PILING**

**CAN TAKE IT!**

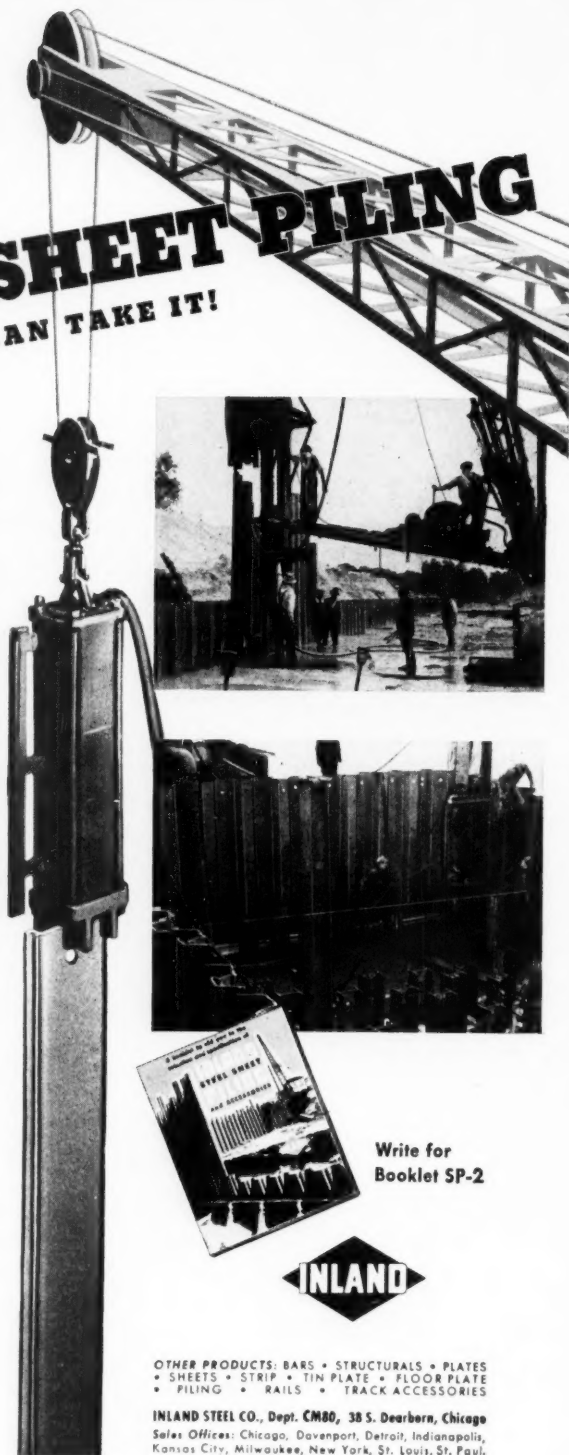


For over 25 years, piling contractors have used and depended upon Inland sheet piling. They have used it with continued good service on single and double wall cofferdams, cellular breakwaters, jetties, docks, bulkheads, and retaining walls.

Inland Piling is rolled from special analysis steel to provide the necessary strength, resistance to corrosion, toughness and uniformity to withstand great stresses. And it has a highly efficient interlock for water retention.

Inland engineers have had broad experience in working with contractors. They are ready to assist you in design, layout and selection of proper material to cut construction costs and speed erection.

Inland steel sheet piling is readily available today. Your orders can be promptly scheduled for early delivery.



**Write for  
Booklet SP-2**



**OTHER PRODUCTS:** BARS • STRUCTURALS • PLATES  
• SHEETS • STRIP • TIN PLATE • FLOOR PLATE  
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**INLAND STEEL CO., Dept. CM80, 38 S. Dearborn, Chicago**  
Sales Offices: Chicago, Davenport, Detroit, Indianapolis,  
Kansas City, Milwaukee, New York, St. Louis, St. Paul.

# B.F. Goodrich



*The Super Traction, Universal and Rock Logger Silvertowns shown at right are available in All-Nylon cord construction—ideal for tough construction projects.*



## **ALL-NYLON tires offer terrific savings; no flex breaks, no bruise breaks, no blowouts!**

**Y**OU can judge for yourself the tremendous savings possible from tires that do not blow out or develop bruise and flex breaks. That's exactly the record run up by BFG ALL-NYLON tires . . . a record proved by more than 2 years' actual use by our customers. To date, not a single ALL-NYLON Silvertown has blown out or been found to have bruise or flex breaks!

Strong, elastic nylon cord helps you make savings in other B. F. Goodrich truck tires, too. All truck tires with 8 or more plies have the popular *nylon shock shield*. This exclusive feature (U.S. Patent No. 2498859) is built in be-

tween tread rubber and the cord body of BFG tires. Under impact, the nylon shock shield distributes and absorbs the shock; shields the cord body. And there is a double shock shield for double protection in large, off-the-road tires.

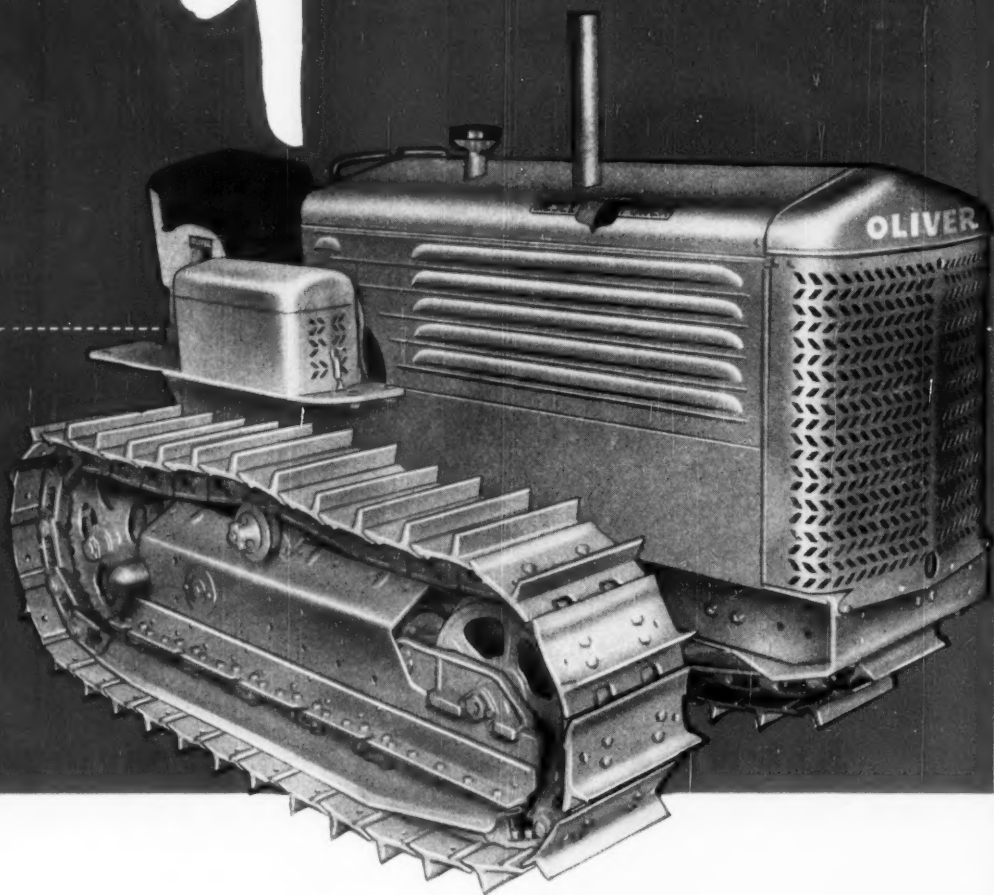
Only B. F. Goodrich gives you the added protection of the nylon shock shield; the added savings from (1) longer tire life (2) increased bruise resistance (3) decreased danger of tread separation (4) more recappable tires. And nylon shock shield costs no extra—you pay no premium!

There's a specially designed BFG high-way truck, off-the-road or grader tire

for every need. Call your B. F. Goodrich Dealer or The B. F. Goodrich Company, Akron, Ohio.



**You can steer it**



# THE OLIVER

*A complete line of industrial wheel and crawler tractors*

# with a finger!

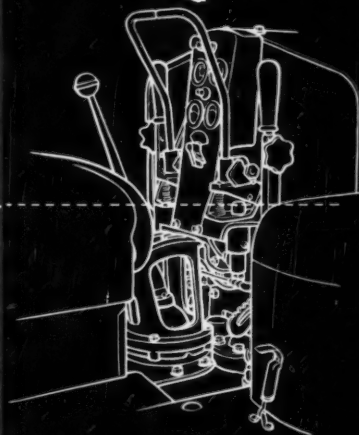
**Here's a good "steer"** in tractors . . . the Oliver Model D Crawler and its new *air steering*.\* This new finger-tip steering makes life easy for the operator . . . cuts down fatigue and lets him get more done per day.

Two conveniently located steering levers can be operated at the touch of a finger . . . assure instant, positive steering control. A compressor mounted to the front of the engine block and driven by the fan belt does all the hard work.

In addition to new air steering, the Model D brings you other outstanding advantages that add up to more money in your pocket. 61.2 H.P. in the gasoline model and 61.19 H.P. in the Diesel Model; 4 forward and 2 reverse speeds; exclusive Oliver steering principle that keeps power on both tracks at all times; rugged, sound construction; easy operation and maintenance are among the many Oliver features that make the Model D the top choice among men who want value for their tractor dollar.

For complete details, see your Oliver Industrial Distributor or write The OLIVER Corporation, Industrial Division, Cleveland, Ohio.

\*Available as optional equipment.



Close-up of air steering controls.  
Note convenient location.

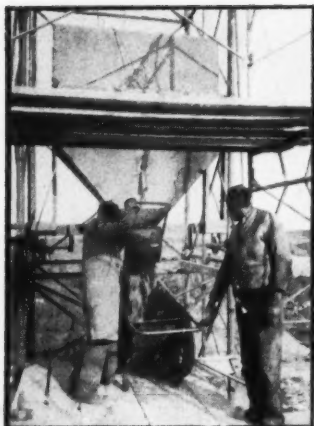
## CORPORATION

Industrial Division: 19300 Euclid Avenue, Cleveland 17, Ohio



"FINEST IN INDUSTRIAL MACHINERY"





## JACKMANCO CONCRETE CARTS HANDLE EASILY

**Proven popular on  
the job by men who  
do the work...**

Your men prefer to handle Jackmanco concrete carts because their work becomes easier.

This is accomplished through proper balance—taking as much of the load off the man as possible—and putting it on the cart, where it belongs. Another reason, is the rocker dump feature. And still another, is the easy wheeling due to pencil roller bearings.

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Your supplier carries 'em. Ask him about his satisfied customers who specify JACKMANCO.

Superior Products  
Since 1876



**JACKSON MANUFACTURING CO.**  
HARRISBURG • PENNSYLVANIA

Volume 32  
Number 8

# CONSTRUCTION METHODS AND EQUIPMENT

ESTABLISHED  
1919



AUGUST 1950

## Pay Dirt in This Issue

Special Trailers Haul Big Penstocks 300 Miles	50
Automatic diameter adjustment with 120-deg support at four points assures economical, safe transport.	
One-Shot Lube System Ups Shovel Output 12%	54
Pump in cab forces grease through tubes to 78 bearings at once, cuts service time from ½ hr to 2 min.	
Motor Buggies Pour High Concrete	56
Four ¾-yd units replace 14 hand-pushed buggies to pour up to 280 yd daily on 8-story hospital project.	
Liquefied Petroleum Gas vs Regular	62
Improved performance and simplified maintenance of butane-fueled rigs make conversion well worth while.	
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Circular 62-ft steel framework and single wale spot sheeting for 44 cells that make 2,780-ft quay wall.	

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ON THE COVER—Whiteman Power Buggies rush concrete to the forms for Bullock's new department store in Westwood, Calif.—an \$800,000 project requiring 8,600 cu yd of transit-mix concrete. Contractor C. L. Peck, Los Angeles, poured it all in only two months with a fleet of six buggies. Their round trip haul averaged 300 ft. An article telling how motor buggies poured an 8-story hospital begins on page 56, this issue.

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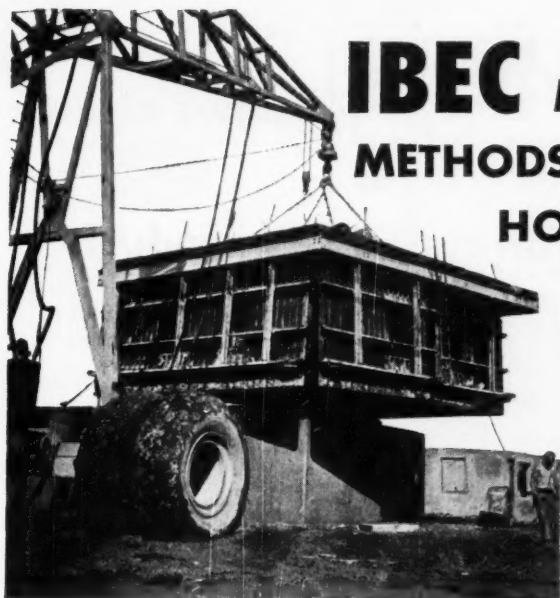
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# IBEC MASS-PRODUCTION METHODS ACHIEVE NOTABLE HOUSING ECONOMIES

● Imagination and know-how, working with good concrete, have achieved another notable advance. Utilizing what in essence is a mobile production line on the job site, the Ibec Method produces attractive, all-concrete homes, at costs which revalue the home-building dollar.

Heart of the Ibec Method is a 25-ton form used for both exterior and interior walls. A 30-ton crane positions the form on a cast-in-place floor slab. Roof slabs, precast on the ground in tiers, are placed on the house by Billner vacuum lifting device. Monolithic concrete walls in a single operation . . . no shoring, scaffolding, ladders . . . completing in hours what normally takes days.

Recent example is Marshall Manor, a 204-unit, low-cost housing project at Norfolk, Va., where attractive, fire-safe homes, built with Lone Star Cement and lightweight, insulating aggregates, rent for only \$45. a month.

Here is Gibraltar-like, all-concrete construction—impervious to fire, termites, weather, wear. Adaptable to any good architectural design, the Ibec Method stretches the building dollar in the home-owner's favor.



## MARSHALL MANOR, Norfolk, Va.

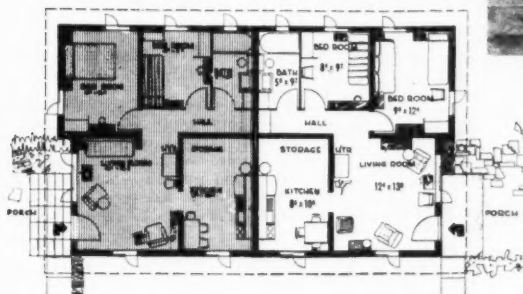
Built by **HENRY CLAY HOFHEIMER II**, Norfolk

Construction Method developed by

**IBEC HOUSING CORPORATION,**

Affiliate of **INTERNATIONAL BASIC ECONOMY CORP.,**  
New York

Built with Lone Star Ready-Mix Concrete from:  
**SOUTHERN MATERIALS CO., INC.,** Norfolk—Richmond



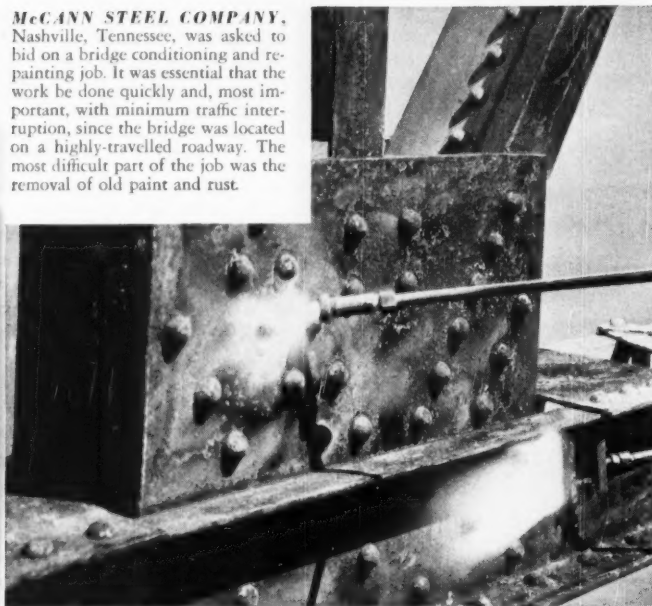
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LONE STAR CEMENT, WITH ITS SUBSIDIARIES, IS ONE OF THE WORLD'S LARGEST CEMENT PRODUCERS: 15 MODERN MILLS. 27,500,000 BARRELS ANNUAL CAPACITY

# Oxyacetylene Flame Cleaning speeds bridge repainting —without traffic interruption

**McCANN STEEL COMPANY**, Nashville, Tennessee, was asked to bid on a bridge conditioning and repainting job. It was essential that the work be done quickly and, most important, with minimum traffic interruption, since the bridge was located on a highly-travelled roadway. The most difficult part of the job was the removal of old paint and rust.



**F. T. Wilson**, Airco technical sales service representative, recommended oxyacetylene flame cleaning to remove scale and old paint prior to repainting. This process, requiring minimum equipment, leaves a warm, clean surface, which is conducive to a long-lasting paint job. Notice in the photograph how the rivet heads are being cleaned with a round tip and the flat surface is being conditioned with a wide flat tip.

The entire bridge was cleaned most satisfactorily, without disrupting traf-

fic too greatly. City officials were very pleased. Bids for reconditioning a second bridge across the Cumberland River will specify the use of flame cleaning.

If you have steel structures exposed to the elements, requiring long-time paint protection, investigate the advantages of Airco oxyacetylene flame cleaning. For technical service or copies of bulletins ADG-1066A, ADG-1067 and ADR-57, describing this process, please write your nearest Airco Office.



## AIR REDUCTION

Offices in Principal Cities

TECHNICAL SALES SERVICE—ANOTHER AIRCO PLUS-VALUE FOR CUSTOMERS

## news about



## products

**IMPROVED AIRCO NO. 78E  
MILD STEEL ELECTRODE**



No. 78E is an improved high quality E6010 electrode. It has a very smooth spray type arc with little spatter. The deposit

solidifies quickly producing very smooth horizontal fillets. It also operates exceedingly well on vertical up, vertical down and overhead welding. The mechanical properties and X-ray characteristics are excellent exceeding the requirements of the E6010 class.

This electrode is used extensively in the welding of fittings on fired or unfired pressure vessels, storage tanks, structural frames, bridges, pipe lines, and all classes of marine work where high ductility and tensile strength are essential.

### AIRCO HELIWELDING EQUIPMENT



All high capacity Heliweld holders are water-cooled to provide sufficient cooling for high currents used. There's the Air-Cooled Manual

Holder for light, general-purpose work . . . the Water-Cooled Manual Holder for heavier, general-purpose work . . . the Machine Holder for semi-automatic installations . . . the Automatic Head for the fully automatic operations. Also available is a Heliweld "Bumblebee" for AC heliwelding. This machine has all controls for current, gas and water within its housing, PLUS a one unit power supply.

For more information, write your nearest Airco office today for a free copy of Heliwelding Catalog No. 9.

★ ★ ★

**Air Reduction supplies Oxygen, Acetylene and other industrial gases . . . Calcium Carbide . . . and a complete line of gas cutting machines, gas welding apparatus and supplies, plus arc welders, electrodes and accessories. Ask us about anything pertaining to gas welding and cutting, and arc welding . . . we'll be glad to help you.**

# OPERATION TUNNELS with 51 "EUCS"



This 15-ton Rear-Dump "Euc" loaded with rock excavation climbs a 10 per cent grade at Bowerston, Ohio. Contractor is Hunkin-Conkey Construction Co.

On contracts totaling 6,500,000 cu. yds. of excavation for relocating the main-line roadbed of the Pennsylvania Railroad in Ohio, 51 "Eucs" are hauling most of the yardage which consists of rock, dirt, and heavy shale.

This relocation will eliminate four single-line tunnels and replace them with double track through large cuts. The material is shovel-loaded into the "Eucs" for hauls averaging one-half mile in length with grades up to 10 per cent.

The speed, large capacity, and rugged staying power of Euclids enable the three contractors on these jobs to stay ahead of schedule. Because they are built for long life and dependable performance in heavy off-the-highway service, Euclids cut hauling costs—they move more loads per hour at more profit per load.

Ask your Euclid Distributor or branch to show you performance data on these and other jobs. There is a Euclid model to meet your requirements for off-the-highway hauling of earth, ore, coal, or rock.



One of the "Eucs" owned by Letrobe Construction Company is loaded with rock and shale by a 2½ yd. shovel.



At Rochex Brothers' job near Reed's Mill, O., a "Euc" dumps its 15-ton load of rock over a waste bank.

**The EUCLID ROAD MACHINERY Co., CLEVELAND 17, OHIO**

CABLE ADDRESS—YUKLID

CODE—BENTLEY



# EUCLIDS



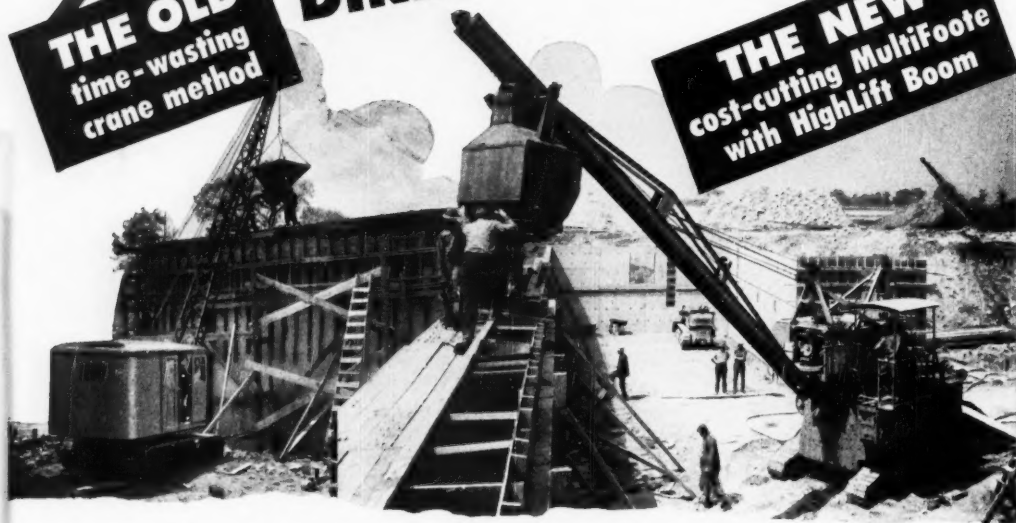
*Move the Earth*



# Save Time with the DIRECT POUR!

**THE OLD**  
time-wasting  
crane method

**THE NEW**  
cost-cutting MultiFoote  
with HighLift Boom



FIGURING on pouring bridge piers, abutment, walls or retaining walls? No matter what it is the MultiFoote with HighLift Boom can save you money with the Direct Pour.

The MultiFoote can handle a wall form with almost the snap and click of a road pouring job. It brings you the capacity and output of a paver and it is the only paver that can put this output up 23 ft. or above. It gives you better control of the mix, saves the time always wasted in transferring the mix from one

machine to another and frees the crane for other work. Your MultiFoote on wall pouring will eliminate false work and save time and money.

If you have a pouring job to do, check into the MultiFoote and the HighLift Boom. Let us tell you what others are doing with it. There is a MultiFoote Sales Representative near you.

## THE FOOTE COMPANY, INC.

Subsidiary of Blaw-Knox Co.  
1910 State Street • Nunda, New York

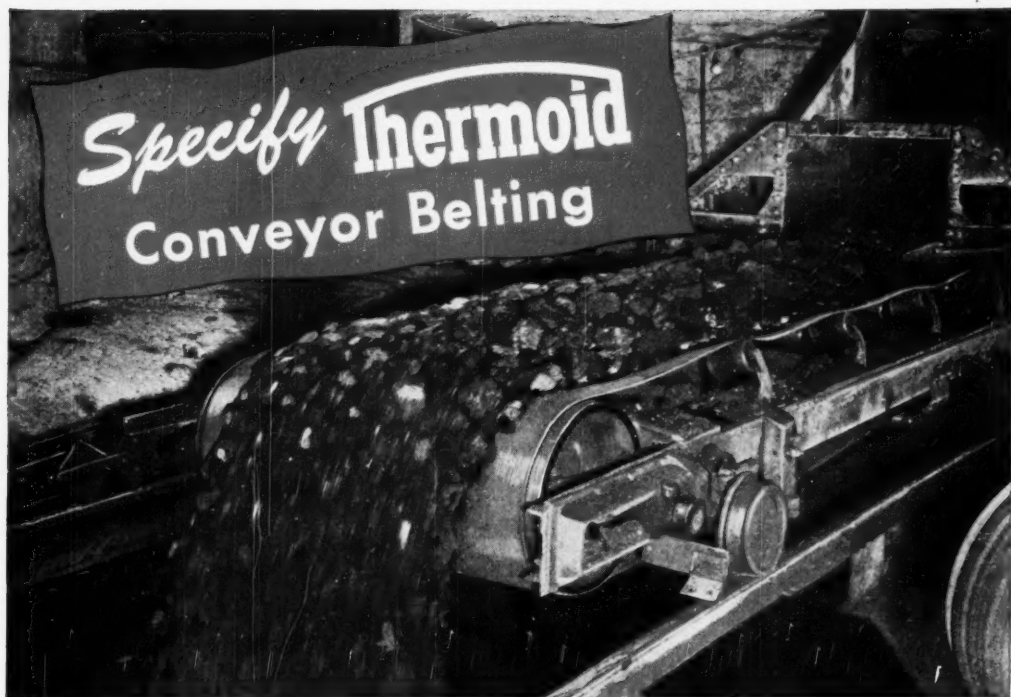
## MULTIFOOTE PAVER

FOR EVERY PLACE CONCRETE MUST BE POURED



Do you lay Black Top? The Adnun is an all 'round Black Top and Material Spreader. One machine for black top, stone, slag, cinder, sand or soil cement. Does the job with less cost for subgrade preparation—Ask for details.

## ADNUN BLACK TOP PAVER



## Thermoid Shuttle Belts Feed Tons of Coal to Surge Bins . . . Cut Conveying Costs !

Thermoid Belting is a consistent cost-cutter because it carries maximum tonnage, requires little maintenance, and stands up under plenty of punishment.

Whether the job is handling ore, coal or rock, Thermoid Conveyor Belts stay on the job—long after other belts fail. Fewer delays due to belt-breakage . . . belt-slippage . . . premature wear and tear.

Your Thermoid Distributor carries a complete stock to meet your requirements. Thermoid Field Representatives are available to help you select the right Thermoid Belting for your job. Broad experience in *all* fields of industry equip Thermoid Engineers to recommend the belt that can best perform the tasks you assign it in your daily operations.

It will pay you  
to

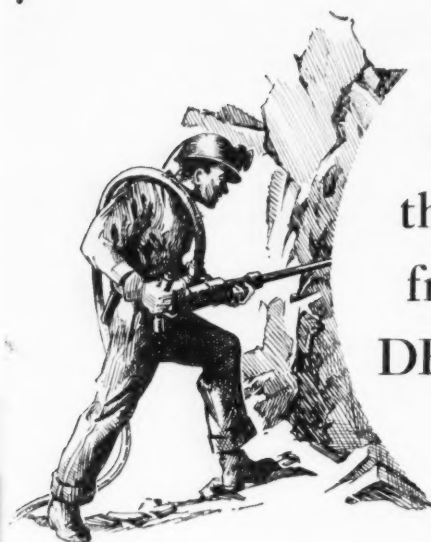
**Specify Thermoid**

For economy, strength, load-capacity, your belting dollars buy more potential operating profit with Thermoid.

*Thermoid Quality Products: Transmission Belting • F.H.P. and Multiple V-Belts • Conveyor Belting • Elevator Belting • Wrapped and Molded Hose • Molded Products • Industrial Brake Linings and Friction Materials.*

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Company**

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Getting  
the **MOST**  
from your  
**DRILLING**  
?



## **ROCKMASTER** blasting pays you **MORE PROFITS PER DRILL HOLE!**

The ROCKMASTER blasting system changes a lot of thinking about drilling blast-holes, because it enables the explosives in each hole to do more work! Many blasters today are saving from 20% to 40% of their former drilling costs—and saving important money on dynamite, too—since putting the ROCKMASTER system into effect in their quarries, mines or construction operations.

The ROCKMASTER system is based on split-second time intervals between blast holes, the timing being controlled within the electric detonators. You have a choice of 16 time intervals, which we help you select to fit your requirements. Explosives are chosen and loaded to fit the ROCKMASTER plan. The result: Explosives gases work behind the burden longer, stepping up blasting efficiency and accomplishing far superior breakage, combined with almost unbelievable control of throw.

In terms of drilling, this usually means that drill holes can be spaced farther apart. Or, it might mean you can use less dynamite with your regular spacing. Drilling for secondary blasting is usually cut way down, frequently eliminated altogether.

Write for booklet showing typical ROCKMASTER loading patterns for various types of blasting work. Or, better yet, call in the Atlas representative and let him tell you frankly what ROCKMASTER blasting can do for you.



### **ROCKMASTER TIMINGS**

Rockmaster No.	Avg. Time of Each Delay from Zero (milli-seconds)
0 (zero) . . . . .	0 (inst.)
1 . . . . .	8
2 . . . . .	25
3 . . . . .	50
4 . . . . .	75
5 . . . . .	100
6 . . . . .	125
7 . . . . .	150
8 . . . . .	175
9 . . . . .	200
10 . . . . .	250
11 . . . . .	300
12 . . . . .	350
13 . . . . .	400
14 . . . . .	450
15 . . . . .	500
16 . . . . .	550

ROCKMASTER: Reg. U. S. Pat. Off.

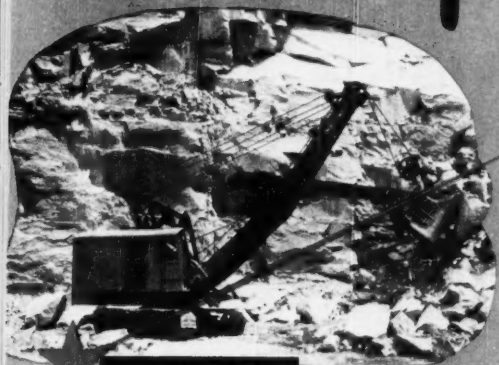
# **ATLAS** EXPLOSIVES

"Everything for Blasting"

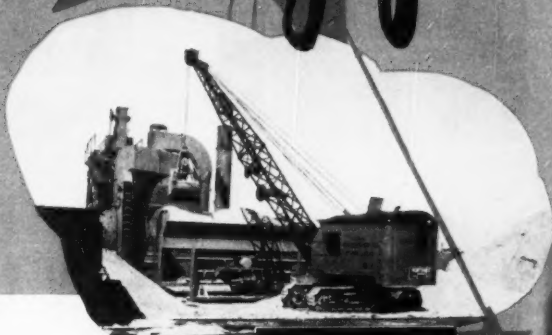


ATLAS POWDER COMPANY, Wilmington, Del. • Offices in principal cities • Cable Address—Atpowco

# The star performer on every job!



**SHOVEL**



**CRANE**

WEIGH all the features in the Shovel, Crane, Dragline, Pullshovel or Truck Crane you intend to buy! Remember that it takes more than one feature to make a piece of equipment profitable to you. It isn't a type of crawler, a type of control or a type of drive that you want. It is high output! That's what makes money — and you want the combination of advantages that makes high output possible.

Weigh all the features in the equipment you are considering. Other equipment you will find is often spoken of as "A Good Crane", "A Good Dragline", "A Good Shovel or Pullshovel" but Northwest is universally recognized as a leader whether operating as a Shovel, Crane, Dragline or Pullshovel. You can't have Northwest advantages unless you have a Northwest!



**DRAGLINE**

**NORTHWEST ENGINEERING CO.**  
1503 Field Bldg., 135 South LaSalle Street, Chicago 3, Illinois



**TRUCK CRANE**



**PULLSHOVEL**

**WEIGH ALL THE ADVANTAGES**

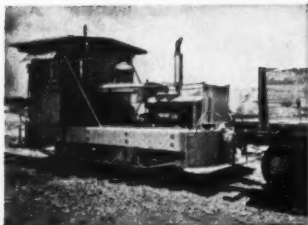


WHETHER SHOVEL, CRANE, DRAGLINE  
PULLSHOVEL or TRUCK CRANE

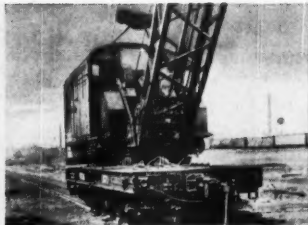
*a star on every job!*

# NORTHWEST

CRAWLER and TRUCK MOUNTED SHOVELS • CRANES • DRAGLINES • PULLSHOVELS



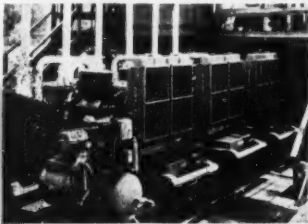
**LOCOMOTIVES**—Repowered with GM Diesel Torque Converter unit, this 20-ton locomotive hauls double the tonnage without ever shifting into low gear.



**HOISTING**—Converted from steam to GM Diesel Torque Converter power—estimated operating savings will pay repowering and overhaul cost in less than two years.



**EARTH MOVING**—Two 190 H. P. GM Diesel Torque Converter units give 34-ton Euclid 1-FFD rear dump a speed of 25.4 m.p.h. with full load.



**DRILLING**—"1/3 faster than with original engines," says owner of rig repowered with 3 GM "Twin" Diesel Torque Converter units.



**LOGGING**—Powered with GM Diesel Torque Converter unit, this Washington Iron Works yarder has yarded 140,000 bd. ft. per day.



**WRITE FOR YOUR COPY**  
of 24-page illustrated catalog giving full details on design, operation and application of "The NEW General Motors Diesel Engine-Torque Converter Unit."

# How to Get *MORE WORK* from your Equipment

Operators in every field report they get more work done in less time at lower cost with equipment powered by General Motors Diesel Engine-Torque Converter units.

The combination of a GM Diesel engine with an integrally built torque converter and fluid coupling provides a compact power unit which makes available maximum engine horsepower and torque regardless of the speed of the load. It delivers high torque for starting heavy loads and *automatically* shifts to fluid coupling when load requirements equal engine torque. Gear shifting is cut to a minimum—often eliminated. Smooth transmission of power through a fluid, protects both engine and driven machinery from sudden shock loads—prevents engine stalling under any load condition.

These efficient Diesel Engine-Torque converter units are available with 3-, 4-, and 6-cylinder engines, Twin 4 and Twin 6 multiple engines, rated at 64 to 294 B.H.P. See your GM Diesel distributor or write us for further information.

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SINGLE ENGINES . . . Up to 275 H. P. **DETROIT 28, MICHIGAN** MULTIPLE UNITS . . . Up to 800 H. P.

**GENERAL MOTORS**

**DIESEL BRAVN WITHOUT THE BULK**





# 7 Million-Dollar Rush Job!



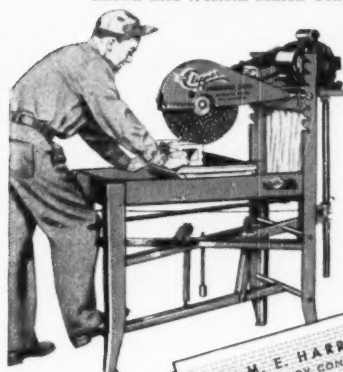
WINN-SENTER  
CONSTRUCTION CO.  
General Contractors

KIVETT and MYERS  
Architects

MARSHALL E. HARRISON  
Mason Contractor—Kansas City

"The beautiful masonry design on the great new MACY'S Store in Kansas City had to be carried through against time penalty deadlines," reports M. E. Harrison, widely known Mid-Western Mason Contractor.

"That meant tremendous quantities of masonry saw cutting at top speeds—not only on Glazed Tile, but on Concrete Block, Clay Back-Up Tile, Brick, and Roman Brick. Our Clipper masonry saws and Clipper abrasive and diamond blades gave us marvelous results."



CONCRETE BLOCK  
Cut in 19 Seconds



GLAZED TILE  
Cut in 17 Seconds



GLASS BLOCK  
Cut in 8 Seconds



GLAZED TILE  
Cut in 17 Seconds



ACID BRICK  
Cut in 15 Seconds



FLUE LINING  
Cut in 11 Seconds



SLATE  
Cut in 15 Seconds



SEWER PIPE  
Cut in 18 Seconds

CLIPPER SAWS MAKE MONEY ON THE SMALL JOBS: Percentage-wise the small masonry jobs and repair jobs often profit most through use of Clipper Saws—because the ratio of labor to materials cost is usually greater. Brick—Stone—Block—Tile. Slice through them all in seconds!

## MARSHALL E. HARRISON Says:

"I estimate that we effected at least a 25% saving cutting with Clipper saws and blades on the MACY project. And with the new Model HD Saw we eliminated dust completely from the re-modelling areas where customers were being served."

"Saw operators got more production with less fatigue by being able to make every cut and every saw adjustment from one spot without ever moving from their normal cutting position. When we had to move fast from one hot spot to another the Clipper Cutting Head was removed in seconds for fast, easy portability. And we didn't have to remove the water pump V-belt in switching from wet to dry cutting—that pump is really foolproof."

9 MODELS  
Priced from \$195

These Features  
Make Possible  
GUARANTEED  
Performance

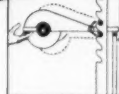
FREE TRIAL  
On Your Job

PATENTED  
Automatic Blade Pressure



Automatic regulation of blade cutting pressure. Provides instantaneous sensitivity for varying materials hardness and differences in Operator's cutting action. This Clipper patented BLADE PRESSURE EQUALIZER SPRING guarantees fastest cutting with longest blade life.

PATENTED  
Selective Clipper Notches



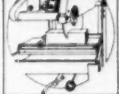
To shift Cutting Head up or down for every size material lift Head lightly upward and outward—then guide to desired Notch. (Exclusive Clipper patent). All weight supported by Connecting Rod "A"—Operator's hands merely guide.

PATENTED  
Adjust A Cut Control



A light pull on the Clipper patented "ADJUST-A-CUT" Knob—and Cutting Head is freed for finger-tip setting to any desired angle. Release Knob and the spring-loaded locking pin engages proper locating hole in Connecting Rod.

PATENTED  
One Spot Operation



From ONE SPOT at the front of his Clipper Saw the Operator performs every cutting operation and makes every saw adjustment. Takes a big physical load off Operator because he never has to leave his normal cutting position.

**Clipper**  
NATION-WIDE DIRECT FACTORY SERVICE  
**MANUFACTURING CO.**  
KANSAS CITY 8, MISSOURI  
Cable Address: CLIPPER K. C. Mo.  
PHILADELPHIA • ST. LOUIS • CLEVELAND • AUSTIN, TEX.  
SAN FRANCISCO • CHICAGO • NEW YORK • PITTSBURGH



DRY ABRASIVE DIAMOND WET ABRASIVE  
CUT WET or CUT DRY  
There's a Clipper Blade for Every Job!

## MAIL THE COUPON NOW!

CLIPPER MANUFACTURING COMPANY  
2809 N. WARWICK • KANSAS CITY 8, MISSOURI

Send TODAY information on the FREE TRIAL offer and complete literature and prices on the 1950 Clipper Masonry Saws.

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COMPANY \_\_\_\_\_  
STREET \_\_\_\_\_  
CITY \_\_\_\_\_ ZONE \_\_\_\_\_  
STATE \_\_\_\_\_

# Give your engines more "PUSH"

**AND reduce  
operating costs by  
lubricating with  
TEXACO URSA OIL X\*\***

Keep your tractor and truck engines *clean* and you'll have full power when you need it . . . maintenance costs and fuel consumption will both be lower. For heavy-duty gasoline and Diesel engines, the lubricant to use is *Texaco Ursa Oil X\*\**. It's detergent, dispersive, dependable in even the severest service.

*Texaco Ursa Oil X\*\** has oxidation resistance to spare. Thus, engines don't get "lacquered up," rings stay free and valves act the way they're supposed to. You get all the power your engines are designed to deliver. *Texaco Ursa Oil X\*\** stands up under heat and pressures . . . protects parts against wear . . . protects bearings against corrosion.

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Chassis bearings will get extra hundreds of miles

of protection, chassis parts will last far longer, when you lubricate with *Texaco Marjak*.

Wheel bearing replacements will be far fewer when you lubricate with *Texaco Marjak Heavy Duty*. It seals out dirt and moisture, requires no seasonal change.

Crawler track mechanisms run better, last longer, protected with *Texaco Track Roll Lubricant*. It gives long-lasting protection against water, dirt and wear.

Follow the Texaco Simplified Lubrication Plan and save maintenance costs all along the line. A Texaco Lubrication Engineer will gladly give you full details. Just call the nearest of the more than 2,000 Texaco Wholesale Distributing Plants in the 48 States, or write:

The Texas Company, 135 East 42nd Street,  
New York 17, N. Y.



# TEXACO



# **Lubricants and Fuels**

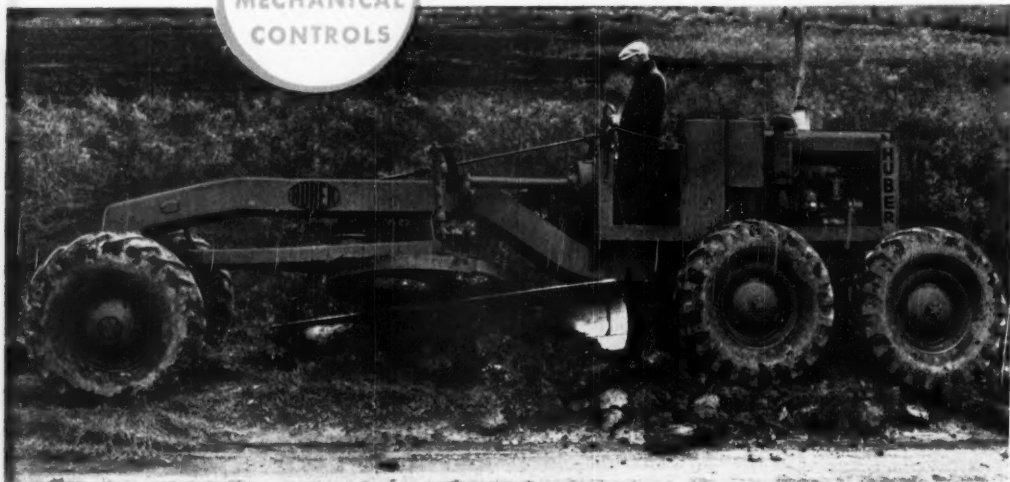
**FOR ALL CONTRACTORS' EQUIPMENT**

130 H.P.  
DIESEL  
ENGINE

25,000 LBS.

HUBER  
HYDRO-  
MECHANICAL  
CONTROLS

## Announcing the new **HUBER MOTOR GRADER!**



### A FEW OF ITS

### MANY FEATURES . . .

- 27½" front axle clearance.
- Hydro-mechanical action on blade lift and side shift.
- Mechanical steering gives operator "road feel."
- Rugged transmission; eight speeds forward, two reverse.
- Heavy-duty roller chain tandem drive.
- Four-wheel hydraulic brakes.
- Extra large front axle spindles.
- Constant-angle front wheels.
- Large front tires to counteract side draft.

Get the full story from your HUBER Distributor or write to the factory

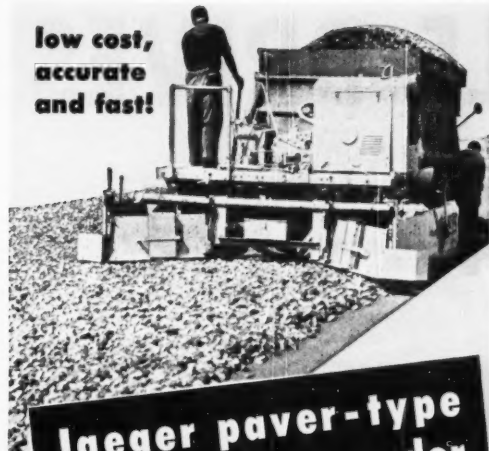
# HUBER

MANUFACTURING COMPANY  
MARION, OHIO, U. S. A. — Since 1863



MANUFACTURERS OF HUBER MAINTAINERS, GRADERS AND COMPLETE LINE OF ROLLERS

**low cost,  
accurate  
and fast!**



## **Jaeger paver-type aggregate spreader**

Self-propelled — 4 wheel drive.

Operates entirely on subgrade — no displacement of newly-spread materials. Blends joints.

Lays up to 9" thickness, up to 12½' width, with straightedge accuracy.

All base and surface aggregates, plant-mixed stabilized soil or free-flowing bituminous mixes.

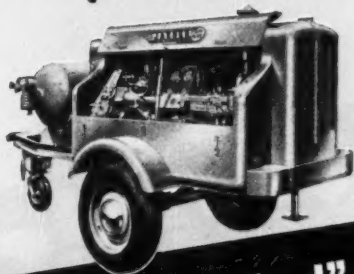


So low in cost you can use two spreaders in tandem to lay full width base, roll in one operation, keep your higher-priced paver busy laying top course — at tremendous saving. Ask for Catalog SPS-9.



**"Teams" with this Jaeger Bituminous Paver:**  
Latest type precision machine for all types of bituminous materials — self-adjusting to widths to 12½', automatic leveling, paves flush to curbs, gutters, operates entirely on subgrade or compacted course. Ask for Catalog BP-9.

**same men, same tools do  
4 days' work in 3**



## **the "new standard" JAEGER 125 FT.**



**keeps 2 big  
breakers hitting  
at top pressure—  
30% to 40% more  
output than  
same tools with  
105 ft. of air**

Every Jaeger "new standard" compressor delivers 15% to 25% more air than old ratings, at full 100 lbs. pressure. From the Model 75 (for one heavy breaker) to the Model 600 (for 2 heavy wagon drills) that higher capacity insures steady full pressure instead of weak 70 lbs. pressure behind your tools—as much work done in 3 days as you used to do in 4—with the same men and tools.

**Ask your Jaeger distributor  
to prove this—on your job**

## **THE JAEGER MACHINE COMPANY**

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Leading distributors in 130 cities of the United States and Canada sell, rent and service Jaeger Engineered Equipment

**PUMPS • AIR COMPRESSORS • MIXERS • TOWERS  
BITUMINOUS PAVERS • CONCRETE SPREADERS and FINISHERS**

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**Cleveland 15** • 1422 Euclid Avenue • MA in 1-5468

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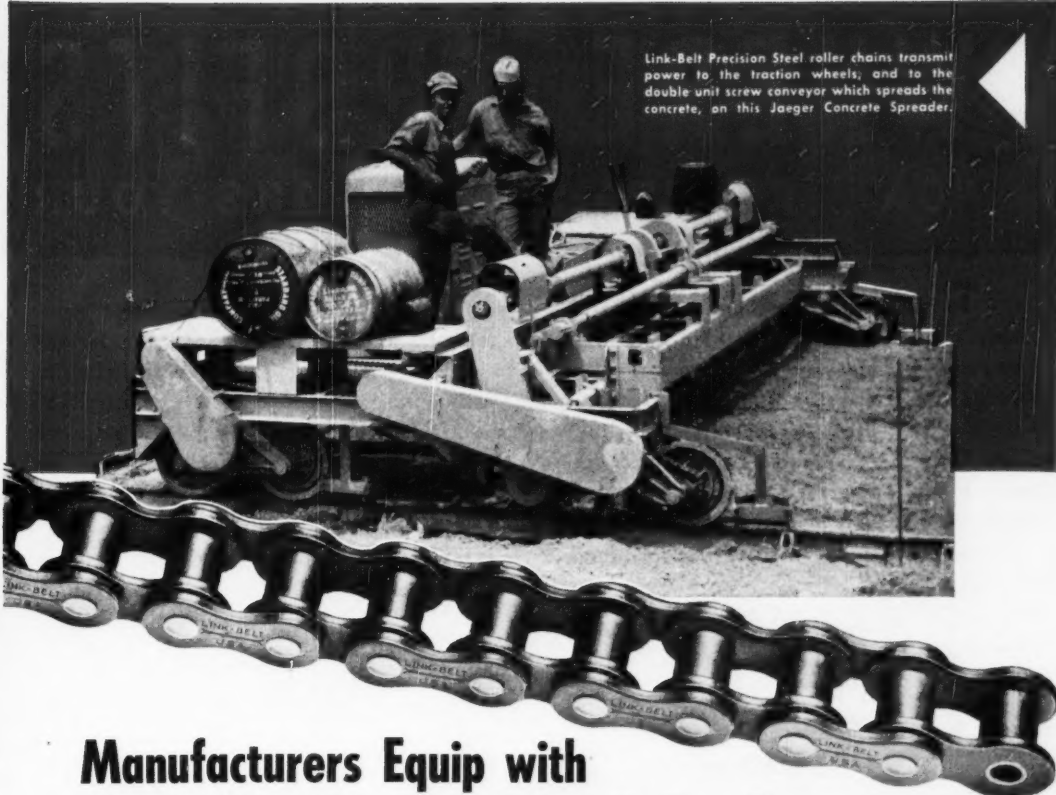
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Link-Belt Precision Steel roller chains transmit power to the traction wheels, and to the double unit screw conveyor which spreads the concrete, on this Jaeger Concrete Spreader.

## Manufacturers Equip with **LINK-BELT Precision Steel Roller Chain** to Assure Non-Slip, Positive Power Transmission

Equipment that is "ready, able and willing" to work is the only kind that makes real money for its users. One of the ways machinery manufacturers assure dependable operation is by using flexible, positive Link-Belt Precision Steel roller chain for the vital function of power transmission.

Link-Belt Precision Steel roller chain drives are compact, take up less space. They are light in relation to strength. They are positive, non-slip. They are shock absorbing, minimizing wear on all associated parts.

### LINK-BELT COMPANY

Chicago 9, Indianapolis 6, Philadelphia 40, Atlanta, Houston 1, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8, Johannesburg. Offices in Principal Cities.

**LINK-BELT**  
ROLLER CHAINS



*Precision Steel*  
AND SPROCKETS

# WHERE PROFITS

## "CAT" EQUIPMENT SPEAKS YOUR

**T**O THE earthmoving contractor profits are mighty important. And an outfit like the one shown on opposite page offers more ways of *boosting* profits than any comparable equipment under the sun. These are not imaginary or "iffy" profits. They're the kind that show up unmistakably—in lower costs per yard, in more yardage per hour, and in more lifetime hours per machine.

Take the "Caterpillar" DW10—one of the

greatest wheel tractor successes in recent years. Look at the work-capacity features and the honest-to-goodness quality "Caterpillar" has built into it. (Nothing is too trivial in making "Caterpillar" products the finest and most profitable investments of their kind.) See your "Caterpillar" dealer for further facts and figures about DW10 advantages for your job.

CATERPILLAR TRACTOR CO. • PEORIA, ILLINOIS

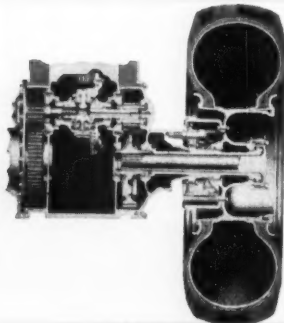


### Profit IN STRENGTH

The DW10 is built to handle big loads. Main frame—composed of two strong box-welded members securely fastened to transmission case—is 12 inches deep at the rear, where the load is carried. The rigid structures have several times the resistance to twisting strains that channel sections of the same size afford. Great frame strength and ruggedness provide a firm foundation for the components of this powerful wheel tractor.

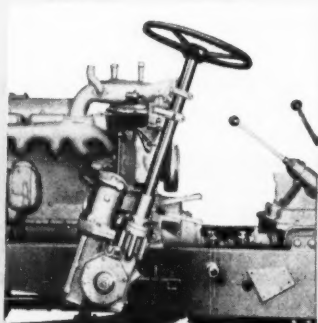
### Profit IN QUALITY

To withstand the demands of continuous hard work, the final drive assembly of the DW10 is rugged yet finely engineered. It embodies precision-built bevel gears, full floating rear axle, crown-shaved "Hi-Electro" hardened final drive gears, optional gear ratios, welded steel transmission case, cast steel final drive housing, air-operated brakes. Sound construction!



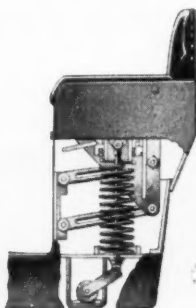
### Profit IN EASE OF OPERATION

A hydraulic booster gives the DW10 passenger-car steering ease and absorbs shock loads when taking rutted roads and down-hill runs. Yet the steering system can be operated independently of the booster feature. A fine safety feature in the highest sense!



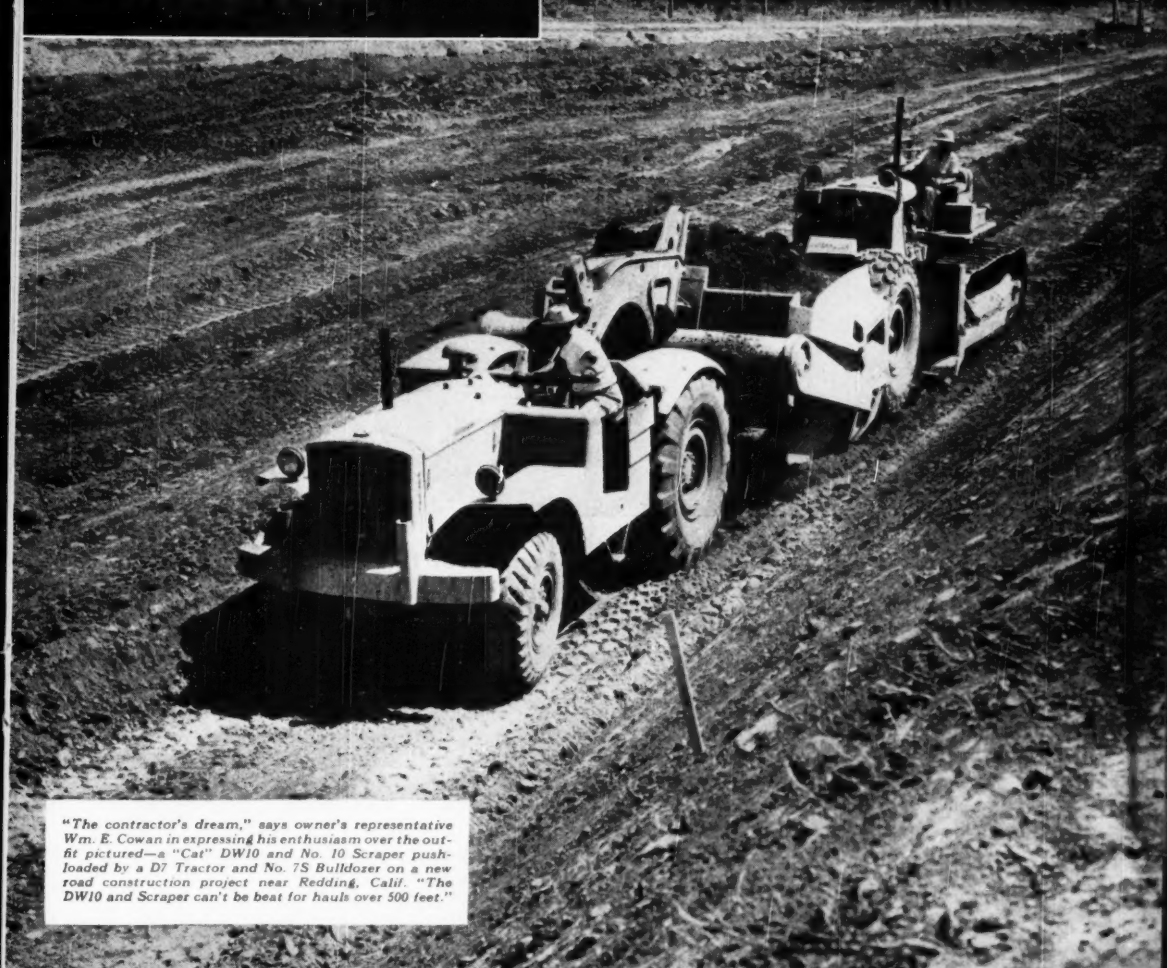
### Profit IN OPERATOR COMFORT

The DW10 is built for easy, safe driving. Besides finger-tip steering, excellent visibility, handy controls, and minimum "stretch," the DW10 provides easy riding through airfoam rubber seat cushion *plus* seat springs that are adjustable to operator's weight.



# TALK...

## LANGUAGE



"The contractor's dream," says owner's representative Wm. E. Cowan in expressing his enthusiasm over the outfit pictured—a "Cat" DW10 and No. 10 Scraper pushed by a D7 Tractor and No. 7S Bulldozer on a new road construction project near Redding, Calif. "The DW10 and Scraper can't be beat for hauls over 500 feet."

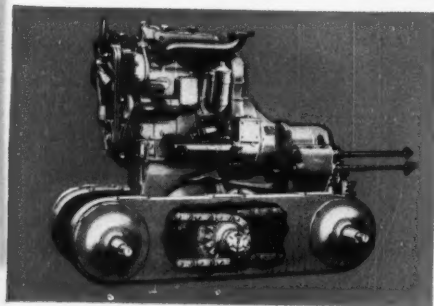
# CATERPILLAR

**DIESEL ENGINES • TRACTORS**  
**MOTOR GRADERS • EARTHMOVING EQUIPMENT**

**SEE the NEW  
MOVIE FILM  
of "CAT" DW10s  
in ACTION**

at your dealer's.  
A full-color picture  
packed with interest  
and convincing  
profit-making  
performance.

# Rough, Rugged, Heavy Duty Lubes for every equipment need!



**FREE** — A helpful new booklet — Earth Moving and Construction Machinery lubrication. Above cutaway view is typical of illustrations found in this new 50-page book dealing with proper lubrication in the construction industry. Write today for your copy.



CITIES SERVICE OIL COMPANY  
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Please send me without obligation your new booklet entitled "Earth Moving and Construction Machinery Lubrication."

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## Look over this complete line of all-weather... all-purpose lubricants!

**N**AME ANY LUBRICATION PROBLEM you can think of!

There's the right grade and type of Cities Service lubricant to do a real job for you. This performance-tested line of quality products will help speed your heavy duty operations, cut maintenance costs, prevent equipment breakdowns. Get in touch with the nearest Cities Service office to learn how these high grade lubricants can help you.

- Trojan All-Weather... All-Purpose Greases
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- Trojan Gear Oils
- Heavy Duty Motor Oils

## CITIES

## SERVICE

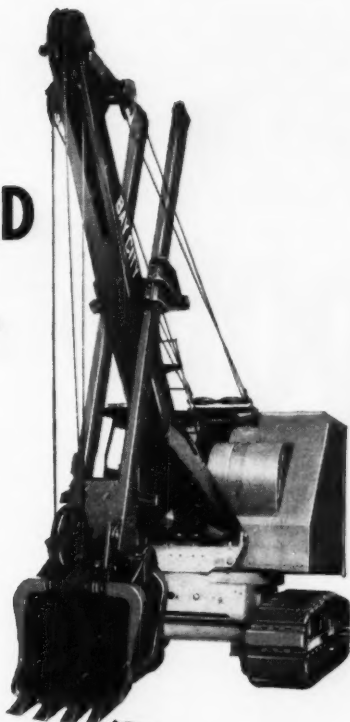
**QUALITY PETROLEUM  
PRODUCTS**

**MORE POWER—  
MORE WEIGHT—MORE  
STABILITY IN THIS 1 YARD  
CONVERTIBLE SHOVEL...**

**the new  
BAY CITY  
MODEL 59**

Because the new Bay City Model 59 one yard shovel is actually a modified  $1\frac{1}{4}$  yard machine, it possesses unusual weight, strength, power and stability that makes it the outstanding buy in its capacity class. Write for full details.

BAY CITY SHOVELS, INC.,  
BAY CITY, MICHIGAN



- Heavy Duty Full One Yard
- 15 Ton Crane Capacity
- New Improved Crawlers
- Power Booster Clutches
- Power Boom Hoist
- Cast Alloy Steel Bases
- Fully Convertible
- 60,400 lbs. Shovel Weight



**BAY CITY**



SHOVELS • CRANES • HOES • DRAGLINES • CLAMSHELLS



Here's a blueprint to LOW hauling costs!

# DODGE trucks are "Job-Rated" for extra savings!

You can enjoy rock-bottom transportation costs and a brighter profit picture when you invest in a Dodge "Job-Rated" Truck.

You'll get a truck that's "Job-Rated" to provide peak performance at lowest possible cost on the toughest of assignments.

Its engine will be "Job-Rated" to give you power

to spare—with maximum gas and oil economy. Every chassis unit—practically every nut and bolt—will also be "Job-Rated." That will cut your operating and upkeep costs.

Your Dodge dealer can help you bridge the gap between profits and losses by showing you a truck that's sized to your job. It will be "Job-Rated"! See him soon.



With all their extra value **DODGE** *Job-Rated* **TRUCKS** are priced with the lowest

As key equipment on a street-widening project in the heart of Sao Paulo, Brazil, this Model T4 TRAXCAVATOR speeds digging and loading of spoil earth into trucks — a scene that is repeated on thousands of jobs the world over, from Sao Paulo to St. Paul.

The nimble TRAXCAVATOR heaps its bucket, pivots, lifts and carries, and dumps its load within half-a-minute elapsed time. Such fast performance indicates how TRAXCAVATORS multiply manpower and horsepower efficiency.

Unit engineered to match the traction-harnessed horsepower of their "Caterpillar" Diesel Tractor teammates, TRAXCAVATORS have the bucket crowd, accuracy of control and operating thrift to make them "tops" in all types of excavating, earthmoving and material handling.

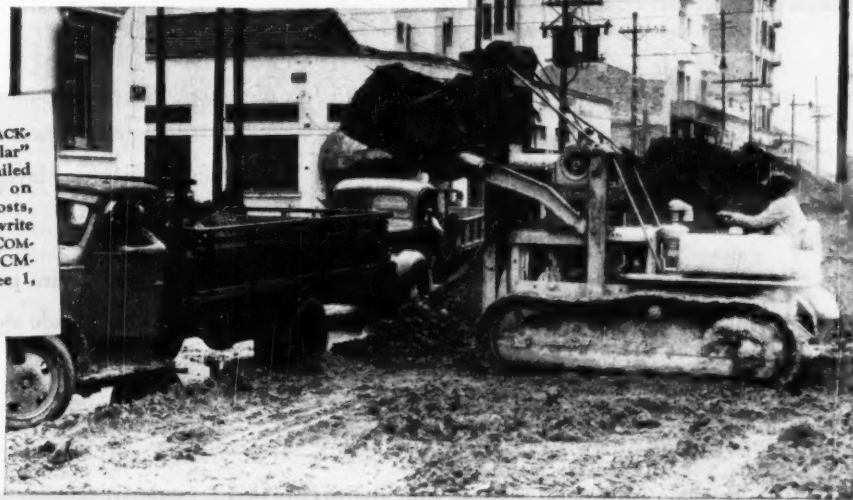
Multi-purpose utility, and variable speed mobility to work at a *creep* or a *sprint*, enable the TRAXCAVATOR to fit the functions of a fleet of limited-duty machines. The 5 TRAXCAVATOR models (1 2 to 4 cubic yards capacity) make this the only line with the choice of unit to fit jobs of all sizes and purposes.

**SÃO PAULO OR ST. PAUL**  
(BRAZIL) (MINNESOTA)

**TRAXCAVATOR**

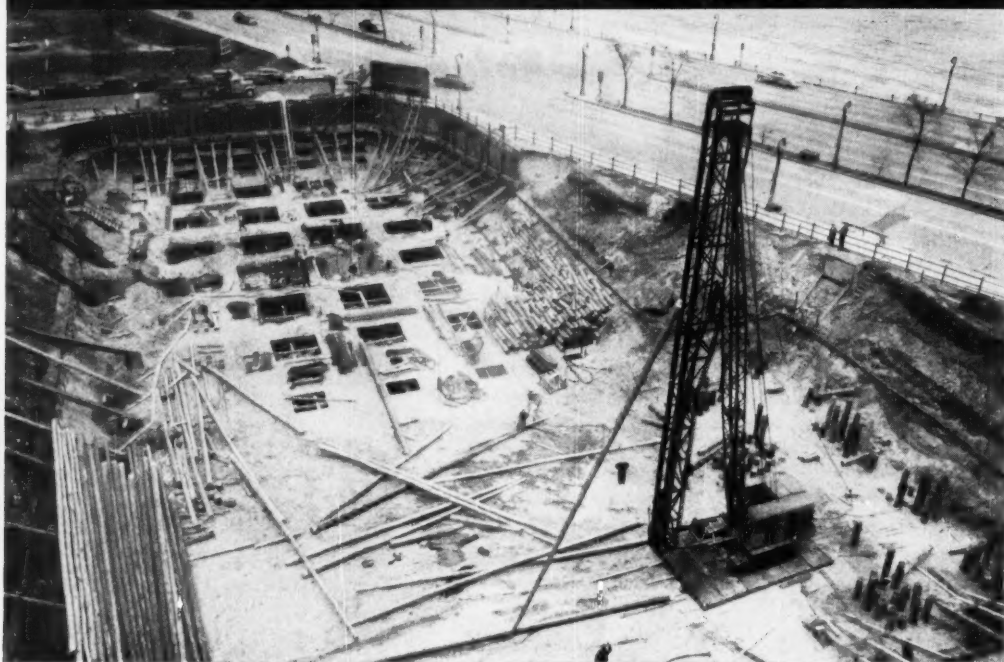
***Belongs* IN THE PROGRESS PICTURE!**

See your TRACKSON "Caterpillar" Dealer for detailed information on capacities, costs, and prices or write TRACKSON COMPANY, Dept. CM-80, Milwaukee 1, Wisconsin.



**TRAXCAVATOR**® *The Original Tractor Excavator*

## LAKE SHORE FOUNDATION PRESENTS A TOUGH DEWATERING PROBLEM . . .



\$4,600,000 Apartment on Lake Michigan's Shore — Chicago — Contractor: B. W. Handler Construction Co., Chicago, Illinois

### WHY TOUGH?

Picture 25 feet of water in fine silt, sand and clay, laminated, with clay at subgrade. To lower the water table in these various strata to the clay layer was our problem.

### HOW HANDLED?

One Moretrench pump, with one spare pump, and 140 carefully installed wellpoints made short work of it. Deepest pits at -21 were bone dry.

No matter what or where your wet job is, we're interested. Contact our nearest office for an estimate on working with MORETRENCH — quickly, economically — "in the dry"!

## MORETRENCH CORPORATION

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New York 6

4900 S. Austin Ave.  
Chicago 38, Illinois

7701 Interbay Blvd.  
Tampa 9, Florida

315 W. 25th St.  
Houston 8, Texas

Rockaway  
New Jersey

Canada: Geo. W. Crothers, Ltd., Leaside (Toronto) Ontario

## A LINEN SUIT IN A BLIZZARD?



### WHY, THE MAN HAS HOLES IN HIS HEAD!

You can't protect yourself against a mid-winter storm with a light summer suit . . . and you can't protect your fuels and lubricating oils with inadequate filters. It's as simple as that. Yet, there are some men who try. They try because they think they can save a few pennies, but instead of making a saving, sooner or later they lose their shirts . . . right out from under their linen suits.

When you're in the market for filters . . . it pays to ask a few questions. How much dirt will the filter actually stop? After it stops the dirt, can the filter hold it? Is the element designed to filter really *dirty* oil, or just *clean* oil? Is the element designed so that its surface will continue to provide efficient filtration over a reasonable period of time, or will it

quickly become clogged and coated and cease to serve its purpose? Is your particular job adequately performed by just one filter, or should it require more than one? And last but not least, are you getting the *right size* filter to give your equipment sufficient protection?

Winslow elements are built to filter *dirty* oil, to eliminate *the dirt that hurts*. They aren't laboratory filters. They are filters built for hard, day-after-day service in actual operation. They save you *dollars*, not *pennies*.

Winslow Filters eliminate the largest particles of dirt first, and then progressively catch and *hold* smaller particles as the oil passes inward toward the center core. There is no premature clogging, no buckling of the element, allowing dirty oil to by-pass it.

If you are interested in complete safety and satisfaction, with lasting economy, write to Winslow today for further details.



## WINSLOW FILTERS

AD W-502

Winslow Engineering Company

4069 Hollis Street • Oakland 8, California

# 380 pay yards hourly



## with 2 C TOURNAPULLS

### Isbell

CONSTRUCTION COMPANY

of Reno, Nevada, is setting a fast dirtmoving pace with two electric-control C Tournapulls on 17.65 miles of new secondary highways north of Elko. They are excavating 316,460 cubic yards of mixed sandstone, rocky clay, and loam, and have 267,750 station yards of overhaul. Much of the material has to be rooted . . . and altitudes average 6,500 ft. . . yet Isbell Construction is keeping production way ahead of schedule with Tournapull performance like this:

#### 1600' cycle every 3.2 minutes

Actual 4-hour time study showed each hustling "C" made 19 trips per hour on a one-way haul of 800'. Loads averaged 10 pay yards in sandy loam. That's 190 pay yards hourly for each "C" . . . and 380 yards hourly for the two Tournapulls.

These LeTourneau rubber-tired dirtmovers are delivering consistently high production on short hauls,

too. On one section of the job, where Tournapulls were hauling 600' to fill, then returning up 15% grades to cut, Isbell's job superintendent cross-sectioned the borrow pit, and reports that each Tournapull moved 200 pay yards an hour.

#### Adds Tournadozer, 3rd Tournapull to fleet

On the basis of this outstanding Tournapull performance, Isbell Construction Company, LeTourneau equipment owners since 1931, recently added a third electric-control C Tournapull and a rubber-tired Tournadozer to their fleet.

Like this progressive Nevada firm, you too will find the new electric-control Tournapulls have what it takes to deliver more yards per hour . . . handle more jobs per year . . . earn more profit per job. Ask your nearest LeTourneau Distributor to show you what these 180 h.p., 35 m.p.h. C Tournapulls can do on *your* work. Write . . . or call him TODAY.

**LETOURNEAU**  
PEORIA, ILLINOIS



# TOURNAPULLS

# on **1600** foot cycles



Pusher-loaded by 144 h.p. tractor, Tournepull heaps 10 pay yards of mixed sand and clay in 42 seconds over 40 ft. distance . . . gets 9½ pay yards in rooted sandstone and shale.

Tournepull, Carryall—Trademark Pat. U.S. Pat. Off. 8195

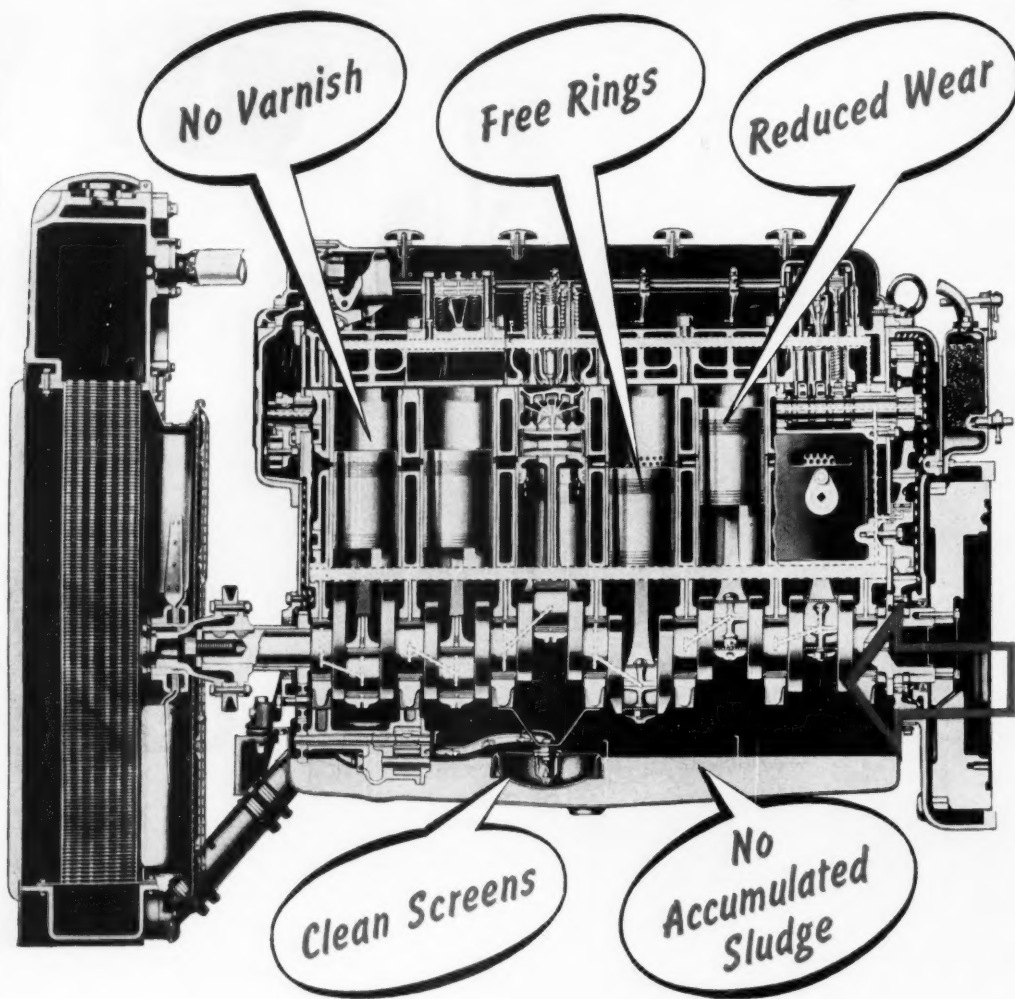


Isbell Construction Co. keeps haul roads well maintained to take full advantage of "C's" 35 m.p.h. speed. Electric controls, positive power steer and 4-wheel air brakes let rig highball over 7 to 15% grades with complete safety.

● **FOR LOWEST NET COST PER YARD**



# In SEVERE DUTY.. Can Double Engine



## SINCLAIR HEAVY

Your Nearest Supplier of Sinclair Products Will Gladly Arrange for Lubrication

# New ***SUPER TENOL*** Life Between Overhauls

New Sinclair **SUPER TENOL** is an oil specially developed to eliminate the high maintenance costs so frequently encountered in both types of "severe duty" service: — 1. High temperature, high speed, over-load; and 2. Low temperature, light load, long idle, stop-and-go.

Under these abnormal conditions, operators

report new **SUPER TENOL** has more than **DOUBLED** the life of their equipment between overhauls.

If you operate diesel-powered or gasoline equipment in severe duty service it will pay you to change to new **SUPER TENOL** now—to keep equipment in operation many more days each year, to save time, labor and money.



## **DUTY LUBRICANTS**

Counsel or Write to Sinclair Refining Company, 630 Fifth Avenue, New York 20, N. Y.

**these 12 square inches  
can mean  
a vital difference  
of 20 cubic feet**



**Every architect, engineer and contractor** knows that a concrete mixer drum must provide elbow room for the materials to mix properly.

**Concrete authorities** have accurately determined the proportions of such *free mixing space* needed in truck mixers and agitators to insure high strength, quality concrete.

**Your eye cannot detect** that a machine which claims 3 cubic yards capacity as a truck mixer actually has 20 cubic feet less than the minimum requirement for good mixing—but *it can always see that such a non-standard truck mixer never bears this rating plate.*

**Look for this rating plate** on the truck mixers that supply your jobs. It guarantees that the supplier is maintaining these quality standards on which the \$250,000,000 ready-mixed concrete industry has been built.

*The Bureau rating plate is available to any manufacturer who meets its quality standards and requirements*

Affiliated with The National Ready Mixed Concrete Association

BLAW-KNOX DIVISION  
Pittsburgh, Pa.

CHAIN BELT COMPANY  
Milwaukee, Wis.

CONCRETE TRANSPORT MIXER CO.  
St. Louis, Mo.

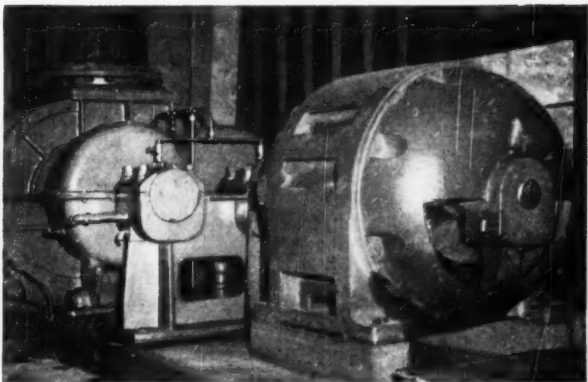
THE JAEGER MACHINE COMPANY  
Columbus, Ohio

WORTHINGTON PUMP & MACHINERY CORP.  
Dunellen, N. J.

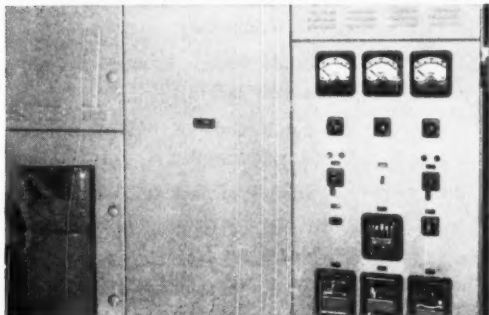
THE T. L. SMITH COMPANY  
Milwaukee, Wis.

**Truck Mixer  
Manufacturers  
Bureau**

Ventilation for the Delaware Aqueduct tunnel is provided by blowers driven by sturdy G-E 200-hp induction motors.



▲ Muck is efficiently hauled by 18 G-E battery and battery-trolley locomotives.



▲ Adequate d-c power for trolley service is obtained from eight G-E 150-KW stationary mine-type mercury-arc rectifiers specially designed for this project.

## tunneling through the CATSKILLS

*...Electrically*

to bring more water to New York City

Adding 300 million gallons a day to New York City's water supply is a big job no matter how it's done. To help bring it from the Delaware River, the Walsh Construction Co. and B. Perini and Sons must bore 25 miles through the Catskill Mountains. At about 70 feet a day, they've still a long way to go, but expect to complete the job around July 1955 with *electrified* equipment co-ordinated and engineered by General Electric.

Every day, more contractors are looking to reliable *electrified* equipment for flexibility, safety, and ease of maintenance. With equipment driven by G-E motors and control, and supplied from G-E power distribution systems they get modern *electric drives* with the added advantages of G-E engineering assistance in application, installation and service. Apparatus Dept., General Electric Company, Schenectady 5, N. Y.

*Ask him Today!*

Whether you buy or build construction equipment, your G-E representative can show you how to do a better job — at lower cost — by complete electrification. Write him now, and he'll call on you at your convenience.

*Electrified Construction*  
BETTER PRODUCT  
LOWER COST

GENERAL  ELECTRIC

664-10

# TIE RODS



- ... made from new billet steel
- ... threaded to any standard or special requirement
- ... rolled threads in diameters up to 1½ in., any length
- ... cut threads in diameters up to 4½ in., any length
- ... straight or bent, single or multiple units, asphaltum-dipped or hot dip galvanized
- ... furnished with full line of accessories, to meet every requirement



Tie Rods are a product of Bethlehem's Letanion, Pa., plant

**BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.**

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation  
Export Distributor: Bethlehem Steel Export Corporation



## THE "EAGER BEAVER"

New Model M-34, 2½-ton, 6x6 truck  
for the Ordnance Dept., U.S. Army

*with*

## REO GOLD COMET POWER

Over a 12-month period, the Ordnance Dept., U.S. Army, has placed orders for 12,900 2½-ton, 6 x 6 trucks. All of these trucks will be powered by Reo Gold Comet gasoline engines and the major portion of the complete units will be assembled by Reo.

This is significant news for truck operators all over the country. Here is additional proof of the sound basic engineering, rugged stam-

ina, and outstanding performance about which Reo Gold Comet truck owners have boasted for more than a year.

A demonstration of Reo Gold Comet Power in your own operation can be arranged at your convenience. Prove to yourself what thousands of Reo owners know—that Reo Gold Comet Power and the new 1950 Reo truck series provide the best truck investment you can make today!

**See your nearest REO distributor  
or dealer today!**

**REO MOTORS, INC., Lansing 20, Mich.**

# REO

TRUCK • BUS • LAWN MOWER  
DIVISIONS

# MEET HIGHWAY WEIGHT LIMITS



## SMITH TILTERS Save More Dollars for Pre-Mix Plants

The cost of a Smith Tilter is saved over and over again in bigger payloads for your agitators and time saved in getting agitators out of the yard. A Smith Tilter shrinks the batch in a hurry and mixes it smoothly, without the usual violent action of other concrete mixers. In discharging the batch, there isn't the slightest segregation. Six sizes available — 1, 2, 3, 4, 5 and 6 yards per batch. Write for bulletins.

## BIGGER PAYLOADS in New Smith-Mobile **LOAD LIMIT TRUCK MIXERS**

Have you load limit problems? Then use Smith-Mobile LOAD-LIMIT Truck Mixers. You get less dead weight. So you can haul more concrete. And you can do it without sacrificing quality. It's all very simple. Certain parts and assemblies not basic or necessary are eliminated. Less mixer? Yes, but the same sturdiness and performance. Enables you to haul **BIGGER PAYLOADS** at lower cost. The initial cost is less and both operating and maintenance costs reduced to a minimum. **LOADLIMIT** models are available in 2, 3, 4½ and 5½ yard sizes. Higher ratings for agitators. All carry approved NRMCA rating plates. Get the complete story. Ask for Bulletin No. 247.



THE T. L. SMITH COMPANY

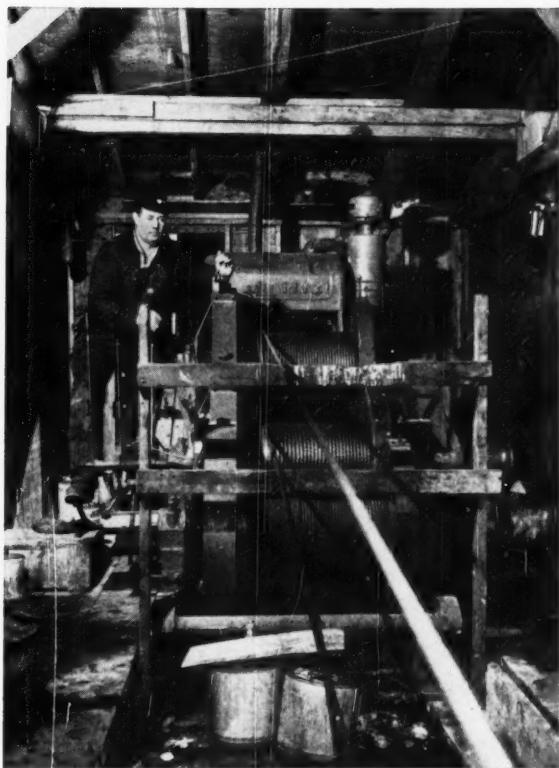
2851 N. 32nd Street • Milwaukee 45, Wisconsin, U.S.A.

# SMITH MOBILE

*Our 50th Anniversary* - A HALF CENTURY OF PROGRESS BUILDING BETTER MIXERS!

1900

1950



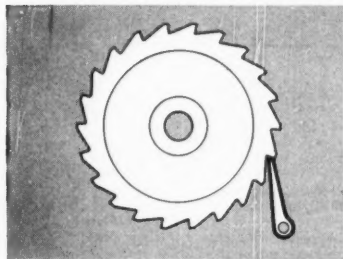
Bill Ransom operating an AMERICAN General Purpose 3-Drum Hoist. Bill likes the controls grouped for easy reach . . . a standard AMERICAN Hoist feature.

## "This is the hoist for me!"

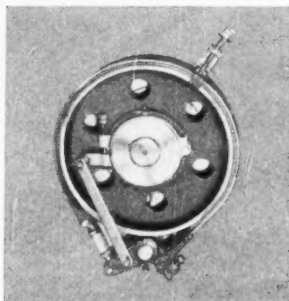
● "And I like it very much," says Bill Ransom, hoisting engineer of Seattle. He's talking about an AMERICAN General Purpose Hoist. "All the controls are right there in front of me," Bill continues, "and I can watch the drums while the hoist is running. It's fast, safe and easy to operate."

Operator satisfaction is one big reason why AMERICAN Hoists are working every day on jobs of all sizes everywhere. AMERICAN Hoists are designed with the operator in mind. Convenient banked controls and fingertip action help to make sure he won't get tired . . . will stay alert to the end of his shift.

Make your next hoist an AMERICAN. You'll get the benefit of advanced and thoroughly tested design in all sizes and types. Capacities from 500 lbs. to 40,000 lbs. single line pull. Mail coupon today for complete information.



COMPRESSION TYPE DOG—Can't bend or slip out of ratchet. A safety feature on all AMERICAN Hoists.



AUTOMATIC SAFETY BRAKE (extra equipment)—Sets automatically if power fails . . . prevents accidental dropping of load.



EXTERNAL CLUTCHES—Contraction band type, help make AMERICAN Hoists safer, smoother, cooler, easier to service.

## American Hoist & DERRICK COMPANY St. Paul 1, Minnesota

Plant No. 2  
So. Kearny, N. J.  
Sales Offices:  
New York  
Pittsburgh  
Chicago

2

American Hoist & Derrick Company  
St. Paul 1, Minnesota

5103

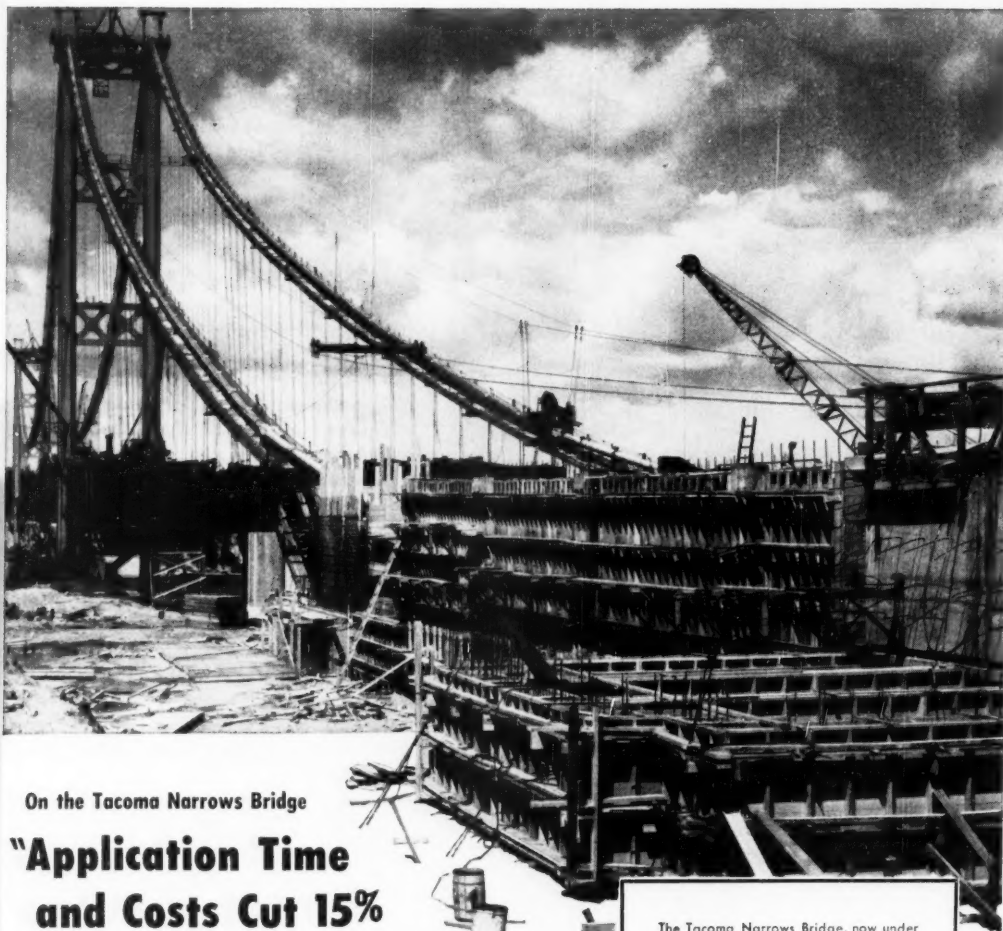
- Please send catalog on American General Purpose Hoists:  
☐ 5 to 40 horsepower ☐ 50 to 100 horsepower

Name \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_



On the Tacoma Narrows Bridge

## "Application Time and Costs Cut 15% With Plywood Forms"

"ONLY PLYWOOD could produce the specified smooth, blemish-free concrete surfaces and also permit simplified, built-up form construction which saved 15 per cent on time and labor costs," says Earl Starbard, superintendent in charge of concrete work on the spectacular mile-long Tacoma Narrows Bridge.

On the job, almost a third of a million feet of Douglas fir plywood is being used for form work on the reinforced concrete road slabs and all exposed concrete on approach structures, viaduct and bents. Reason? "Smooth, easily-finished concrete; speed through ease of handling and large panel size; over-all economy."

These comments are just one more example of why plywood is preferred for all types of concrete form work. Plan now to put these advantages to work for you. Write for two free booklets described at right.

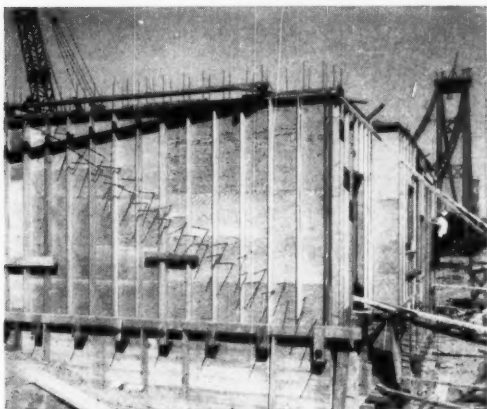
The Tacoma Narrows Bridge, now under construction, replaces the famed "Galloping Gertie" which went down in 1940. View above shows forms in place on anchor; partially erected forms in foreground are for one of two toll house structures. Total length of project 7,250'. The bridge itself: 5,979'. Main span: 2,800'. Constructed by Washington State Bridge Authority, Chas. E. Andrew, chairman and principal engineer. Dexter R. Smith, designing engineer. Concrete work: Woodworth and Co., Tacoma.

# Douglas Fir Plywood

AMERICA'S



Form erection time was speeded by pre-building plywood form sections for anchors, approach structures and viaduct. Inner form faces were built in usual manner: steel reinforcing was then installed and built-up plywood forms were crane-erected in position. For anchor,  $\frac{3}{4}$ " Exterior Concrete Form Douglas fir plywood was nailed across 2"x 6" studs, 16" on center, backed by double wales 24" to 30", on center. Due to decreased concrete pressure, wale spacing was increased toward the top.



Form construction on the approaches and toll houses is similar to that on anchors, except 2" x 4" studding is used. Toll houses are each about 40' x 20' and two and a half stories high. Concrete anchor weighs 22,000 tons, is 30' deep, 80' wide and 120' long.



## Large, Light, Strong Real Wood Panels

For additional data on Douglas fir plywood for concrete form work, write: Douglas Fir Plywood Association, Tacoma 2, Washington. Of particular interest are two booklets: "Concrete Forms of Douglas Fir Plywood" and "Handling PlyForm".

**BUSIEST BUILDING MATERIAL**

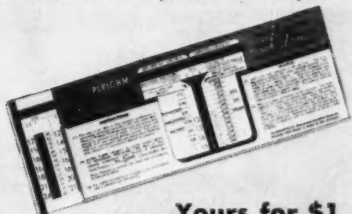
**For Smooth, Fin-Free  
Concrete Surfaces...**

# PLYFORM

**Concrete Form Panels**



Smooth, fin-free surfaces . . . ease of handling . . . strength, rigidity, tightness . . . superior nail holding qualities . . . cost-cutting re-use factors—these are primary advantages of PlyForm. Highly moisture-resistant glues used in PlyForm panels permit multiple re-use (as many as 10 to 15 are not unusual). For the greatest possible panel re-use, however, specify Exterior-type Concrete Form grade of Douglas fir plywood—banded with completely waterproof phenolic resin adhesive. For special architectural concrete, requiring the finest possible finish, the architect or contractor may specify Exterior-type or Interior-type Douglas fir plywood in grades having "A" face veneer—or one of the new plastic-surfaced panels.



**Yours for \$1**

New Keely PlyForm calculator gives construction data for plywood forms, based on hourly rate of pour. Complete with leaflet, "Design Assumptions for New Keely Calculator." Send coupon now!

DOUGLAS FIR PLYWOOD ASSOCIATION  
TACOMA 2, WASHINGTON (Good in USA only)

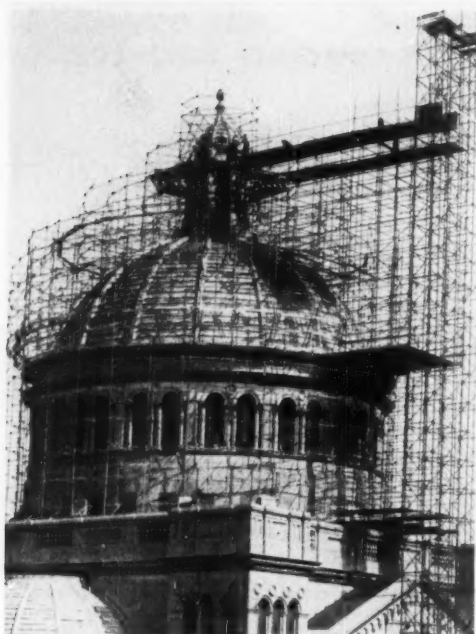
Please send me . . . . . Keely Calculators. I enclose \$1.00 each to cover costs.

Name . . . . .

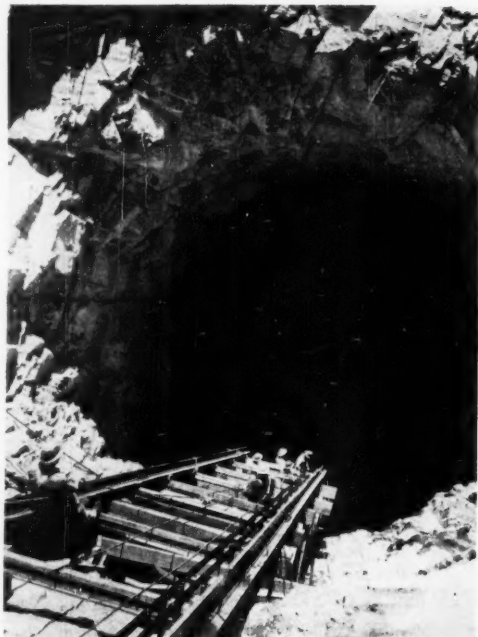
Address . . . . .

City . . . . . Zone . . . . . State . . . . .

## Construction News in Pictures...



**HIGH UP**—New \$330,000 dome is built on famous Boston landmark—First Church of Christ, Scientist (The Mother Church). Gold Medal Tubelox scaffolding from which work is done weighs 90 tons, is 106 ft in dia, 110 ft high, yet no part rests on dome itself. Some 7 mi of steel tube went into scaffold, which cantilevers 31 ft over dome and has 16 working levels at 6 1/2-ft intervals.



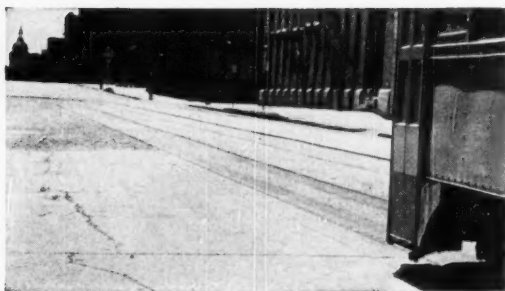
**DEEP DOWN**—Almost vertical railway is built down into world's highest glory-hole spillway—at Hungry Horse Dam in Montana. Railway will lower men and materials for installation of 2 1/2-ft reinforced concrete lining in 35-ft dia spillway 1,125 ft long which will carry overflow through drop of 490 ft. Contractor for \$43,400,000 dam job is General-Shea-Morrison.—USBR Photo



**DEFLECTED**—Simple attachment on Thor pneumatic clay spade deflects exhaust air upward and to side, rather than into bottom of cut, to keep dirt out of operator's face. Al Spaulding of Alex Robertson Co., Los Angeles pipeline contractors, rigged it up. Deflector is fabricated of lightweight steel and is held in place by bolt and welded strap.—Lincoln Electric Co. Photo



**REPLACED**—Relocated bridge is inched across North Canadian River near Econtucke, Okla., to replace washed-out span. State gave old unused 108-ft, 34-ton structure to county, which trucked it 17 mi to new site, then set it in place with trussed gin poles and pulling tackle. Main gin pole 85 ft high supports free end of span; is held in turn by second pole.—Acme Photo



## Ten Years Ago...

this test paving was laid in Minneapolis—the first commercial use of Atlas Duraplastic air-entraining cement. Badly scaled background section was made with regular cement. Foreground concrete was laid at the same time with Duraplastic cement. Here are both sections, photographed ten years later, after ten severe winters, heavy applications of de-icing salts and many freezing-thawing cycles—convincing proof of Duraplastic concrete's lasting durability. Longitudinal structural crack shows some raveling. Note perfect transverse joint.



# Today...It's "DURAPLASTIC\* throughout" on more and more paving jobs

Interchange underpass connecting parkway with Route 60 near Greensburg, Pa. Atlas Duraplastic used throughout. Contractor: W. L. Johnson Construction Company, Hicksville, Ohio.



GROWING NUMBERS of engineers and contractors specify Atlas Duraplastic cement for all types of concrete construction in modern highway paving. For straight paving, and for underpasses, overpasses, bridges—more and more—it's "Duraplastic throughout."

That's because experience has proved that Duraplastic air-entraining portland cement makes more durable concrete, that it fortifies concrete against the effects of freezing and thawing—renders it highly resistant to the scaling action of de-icing salts.

And Duraplastic cement requires less mixing water for a given slump, makes concrete more plastic, more cohesive, more workable and more uniform. Bleeding or water-gain and segregation are minimized. The concrete dumps, spreads and screeds easily, permits finishing closer to paving,

allows earlier protection for curing. And in structural work, surface appearance is improved.

Duraplastic cement makes better concrete at no extra cost. It provides the precise amount of air-entraining agent interground with the cement for satisfactory field performance. It complies with ASTM and Federal Specifications, sells at the same price as regular cement, calls for no unusual changes in procedure.

Send for free new booklet, "A Decade of Atlas Duraplastic Air-Entraining Portland Cement." Write to Universal Atlas Cement Company (United States Steel Corporation Subsidiary), Chrysler Building, New York 17, N. Y.

Offices: Albany, Birmingham, Boston, Chicago, Dayton, Kansas City, Minneapolis, New York, Philadelphia, Pittsburgh, St. Louis, Waco.

\*"Duraplastic" is the registered trade mark of the air-entraining portland cement manufactured by Universal Atlas Cement Company.

CM-D-105

# ATLAS DURAPLASTIC

AIR-ENTRAINING PORTLAND CEMENT

**MAKES BETTER CONCRETE AT NO EXTRA COST**

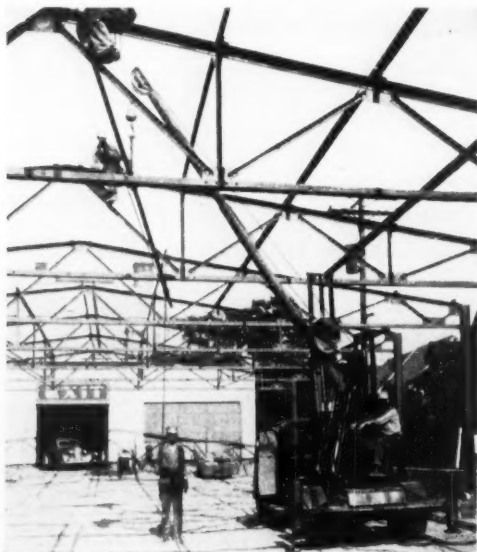
TRADE MARK REG.  
U. S. P. O. CO.

NBC SUMMER SYMPHONY CONCERTS—Sponsored by U. S. Steel Subsidiaries—Sunday Evenings—June to September



**TAMED RIVER** —Mighty Colorado River backs up behind nearly completed Davis Dam. Now 70 ft deep, reservoir extends 30 mi upstream, will eventually back 67 mi to Hoover Dam when pool nears top of 138-ft embankment. At left, finishing touches are

being put on spillway, and powerhouse and bridge spanning fore-bay channel are under construction. First of five 45,000-kw generators is scheduled to go on line early next year. Utah Construction Co. is prime contractor.—USBR Photo



**FAST WORK** —Truck-mounted Bucyrus-Erie Hydrocrane erects 60x140-ft steel-frame building in only one day, including travel to and from job and unloading steel from trucks. Telescopic boom and fully hydraulic operation let rig set 1 1/2-ton, 50-ft trusses in hurry, and nose into tight corners to set lighter steel.



**CRAMPED QUARTERS** —John F. Casey Co., foundation subcontractor on 40-story building for Mellon Bank and U. S. Steel in Pittsburgh, couldn't find shop and office space at site, so took to air. Closing off half of street, they put shanties on braced 12x12-in. posts, now can look right down into hole.

# Here's the dividing line

## for *Highway Safety*

A positive dividing line between danger and safety is the sign of a good highway. It saves lives, promotes driver confidence and means fewer serious accidents. You can do this efficiently and economically with FLEX-BEAM Guardrail.

FLEX-BEAM has high visibility that warns of danger ahead. Yet should a collision occur it helps guide the car until the driver regains control. The continuous beam action provides high resistance to impact at any point along its entire surface. Dangerous pocketing is eliminated and the possibility of a serious accident is greatly reduced.

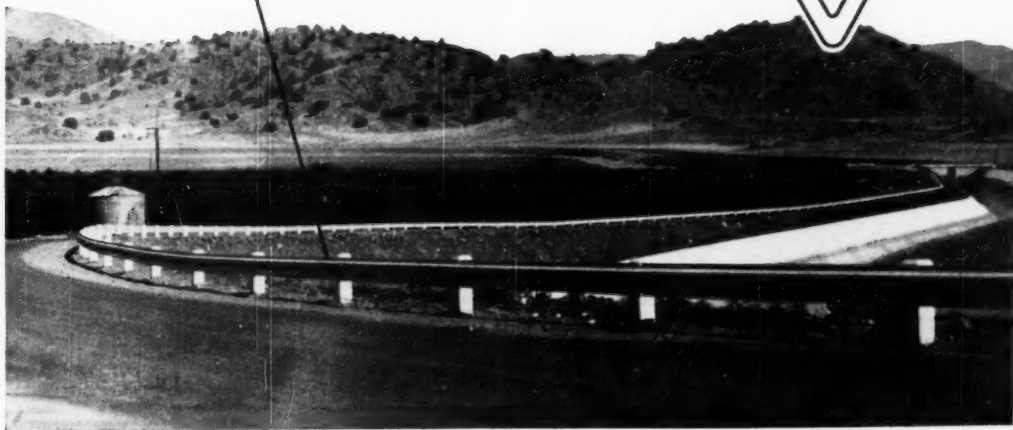
Installing FLEX-BEAM Guardrail is easy and the work goes fast. Posts, rails and bolts are all you need. No springs, turn-

buckles, deadmen or castings. Splices are made with just seven bolts, the center bolt holding the rail to the post. A small unskilled crew does the job.

Curves are no problem either. There is no tension to pull posts out of line. Individual FLEX-BEAM sections are pre-curved in any radius from 20 to 150 feet. Longer radius curves do not require shop forming. The traffic face of the rail may be convex or concave to fit on the inside or outside of curves.

Write us for complete information on FLEX-BEAM Guardrail today. Ask too, about FLEX-BEAM Bridge Rail, Armco Drainage & Metal Products, Inc., 5600 Curtis Street, Middletown, Ohio. Subsidiary of Armco Steel Corporation.

### **FLEX-BEAM GUARDRAIL**






**PRE-ASSEMBLED**—Reinforcing steel for Los Angeles' Hyperion sewage disposal plant is pre-assembled in horizontal jigs, then 18x30-ft panels are placed by Link-Bolt Speeder crane. Method speeds steel placement by 50% on 4,300-ton job of Rutherford & Skoubye, reinforcing subs.—Bethlehem Pacific Photo



wherever you are...

# ALEMITE OFFERS LOCAL SERVICE & SUPPLY



 Alemite Branch  
• Service Jobber and  
Industrial Distributor

## Over 1700 Alemite Service and Supply Centers Assure You Quick, Efficient Service—On the Spot!

That's why Alemite customers from coast to coast save time, trouble and money—*daily*! They depend and call upon this vast, national network of experienced lubrication specialists. And so can you!

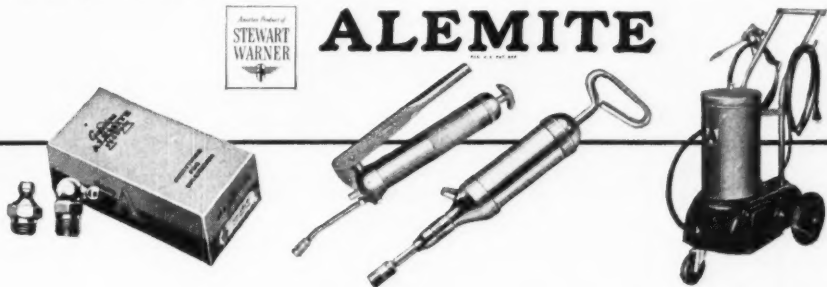
Every Alemite Service Center is staffed by qualified personnel, ready to offer experienced counsel and rapid aid on any lubrication problem you face. Fast, on-the-spot service is a habit, not an occasion, with

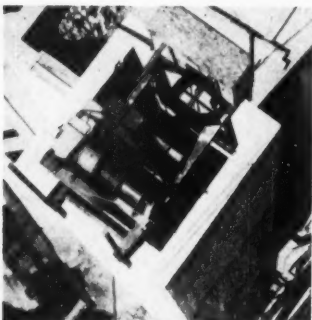
these local Alemite branches, distributors and service jobbers. They are equally "at home" with maintenance, repair or supply problems. And they know what "hurry" means!

**Write today** for the name and address of your nearest Alemite representative. Address your proposal to Alemite, Dept. F-80, 1850 Diversey Parkway, Chicago 14, Illinois.

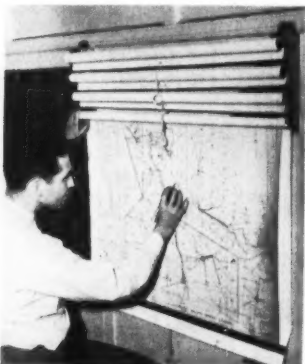


# ALEMITE

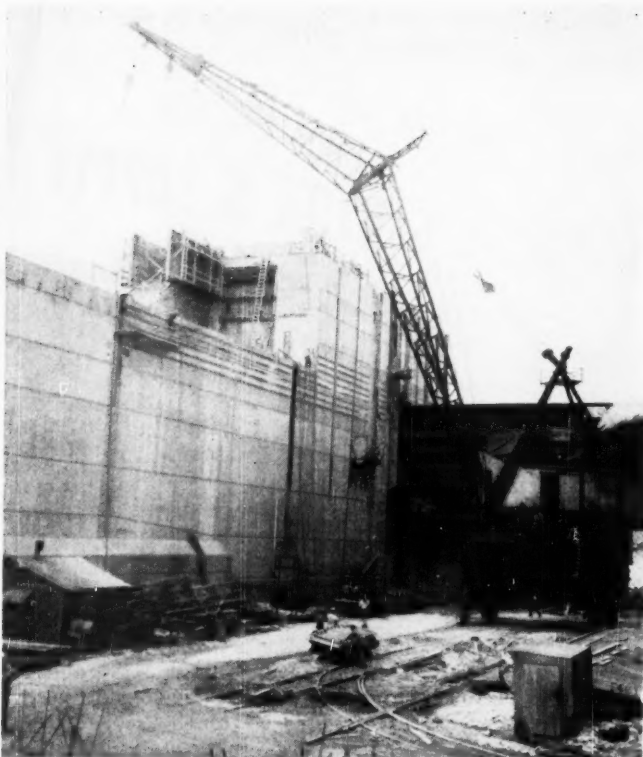




**STACKED**—One-man elevator inside 36x36-in. boiler room stack 150 ft high speeds brick lining job of J. B. Seage Inc. at Parklabrea apartments in Los Angeles. Steel-framed 30x30-in. wood platform holds man, mortar and 6 to 8 courses of brick. Mason operates elevator by push-button control. Power is from 3-hp Century reversible electric motor and gearing with magnetic brakes atop stack. Hoist cable is 1/2-in. Each of 18 stacks has 13,000 bricks; takes 13 days.



**FILED**—Pyramid of standard 40-in. window shades makes handy plan file. Shades are mounted stair-step fashion, each out 3/4 in. farther and 3 in. up from one below, for smooth operation. Each shade holds two large plans, fastened with Scotch tape.



**LOCKED**—Chain of Rocks locks on Mississippi across from St. Louis near completion. Main lock, 110x1,200 ft, with 92-ft walls, is largest in river system. Vertical lift gate (rear) is unusual. River Construction Corp. has \$18,000,000 job.—Wide World Photo



**SOAKED**—Waist deep in waters of Gulf of Mexico off Corpus Christi, Lorain crawler crane with 45-ft boom drives timber breakwater piles. Contractor George W. Thornton, Eagle Pass, Tex., sprays rig daily with oil to protect it from salt water damage.



## Today's Specialized Truck Needs Call for EXTRA-RUGGED WHITE SIX-WHEELERS

**WHERE TRUCKS** have a rugged job to do . . . where there's heavy hauling, tough road conditions or tight schedules . . . where legal weight limits add to payload problems, there you will find sturdy, hard-working White Super Power six-wheelers, carefully engineered to exact work requirements.

Today's operating conditions call for constantly more work, lower truck cost

and longer truck life to keep delivery costs down. An investment in White Quality pays extra dividends in economy and durability on the hard jobs . . . year after year . . . because White Super Power is built to do the hard jobs well.

Your White Representative will gladly show you how Whites can profitably be used in your business.



**THE WHITE MOTOR COMPANY • Cleveland 1, Ohio**

THE WHITE MOTOR COMPANY OF CANADA LIMITED • Factory at Montreal



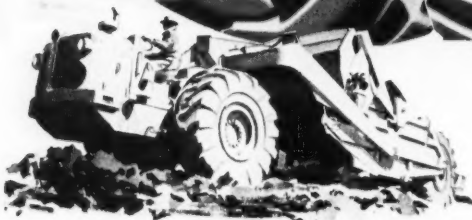
**FOR MORE THAN 50 YEARS THE GREATEST NAME IN TRUCKS**

# Cost conscious?

**Here's the champ  
cost-cutter!**

**T**HIS IS IT—Goodyear's SURE-GRIP tire—the tire that's the overwhelming favorite of economy-minded construction men because it cuts over-all hauling costs. SURE-GRIP is tops for drive-wheel traction on graders and pans because it was specifically designed to deliver maximum performance on these specific jobs.

**Goodyear's got the winning team  
of special-purpose tires**



Sure-Grip, All-Weather—T. M.'s. The Goodyear Tire & Rubber Company, Akron, Ohio

**HARD ROCK LUG**

*Super-tough champ for all  
types of rock work*

**ALL-WEATHER**

*Finest for flotation, rolling  
big loads faster*

*Here are two more great tires for construction work, each the outstanding favorite in its class because each is specially engineered to help you move more yardage faster and cheaper.*

# GOOD YEAR

**MORE TONS ARE HAULED ON GOODYEAR TIRES THAN ON ANY OTHER KIND**

### We Make Our Own Troubles

THIS IS BEING WRITTEN at a fishing camp in Colorado. We're so far up the gulches in the lap of the snow-clad Continental Divide that it takes a dollar to send a postcard out of here. We haven't seen a newspaper, listened to a radio or heard any world news for days. Perhaps isolationism is desirable at times—it's good for peace of mind and soul.

We stopped off here on the home trip from a visit to several big projects in the Northwest. Sitting here in retrospect and in contemplation between sporadic trips to the creek to cast a fly to not-so-hungry trout, we reflect on our recent travels. These remarks may sound trite and foolish by the time they are published. How's the Korean War coming? Has the switchman's strike been settled? Will the conductors and trainmen go out July 15th as threatened? Has the six-weeks' carpenters' strike in Colorado been settled?

Every big job we've visited on this trip has been in trouble. Most distressing, it seems to us, that the trouble for the most part has been man-made. Construction men have largely licked the vicissitudes of nature. They have learned to conquer bad weather, high water, and treacherous ground. But they are helpless in the face of damnable manipulations of their fellow men.

Let's review some of the jobs

we've just seen. At Grand Coulee, J. A. Terteling & Sons are building the million-yard North Dam at the upper end of the Coulee. Every yard of fill must be hauled across a busy highway. They have installed traffic lights at the crossing. But the traveling American public ignores traffic lights in the East Washington desert. Collisions at the crossing are sickening; worst was a double trailer load of gasoline crashing broadside into a loaded Euclid wagon with disastrous results.

Next was Hungry Horse Dam, one of the most beautifully organized and managed jobs in the country. Despite last year's delays, Smokey Wood has stepped up concreting operations to almost 6,000 yd per day—only to have the whole schedule flop because of lack of cement due to the switchman's strike on the Great Northern. Incidentally, there's nothing wrong with the clearing operations in the reservoir area, where two-tractor teams, steel ball and cable rigs are knocking down 200 acres of forest per day. More about this nice deal in subsequent articles.

On to Canyon Ferry Dam near Helena, Mont. Here Canyon Constructors, Inc., headed by venerable and lovable Jack Maguire, are in real trouble. They put the Missouri River in a box, but failed to get a watertight seal on the upstream

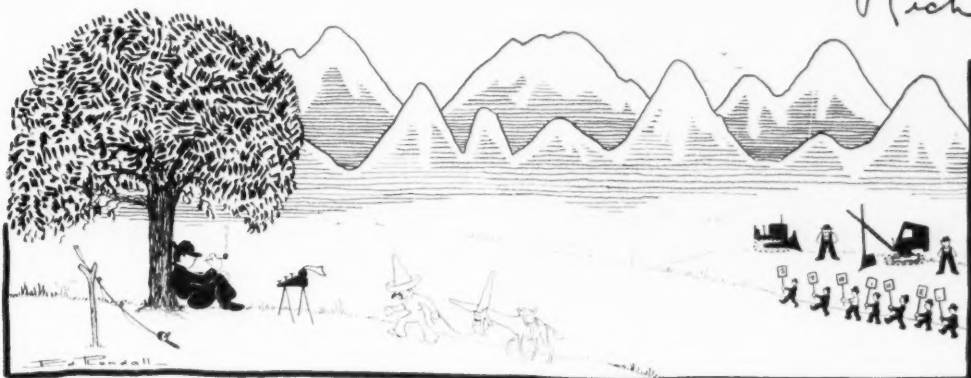
cofferdam, and the barrier blew in during a flood just as they were ready for concrete at the bottom of the hole. The two-month delay may shove them over into an extra construction season.

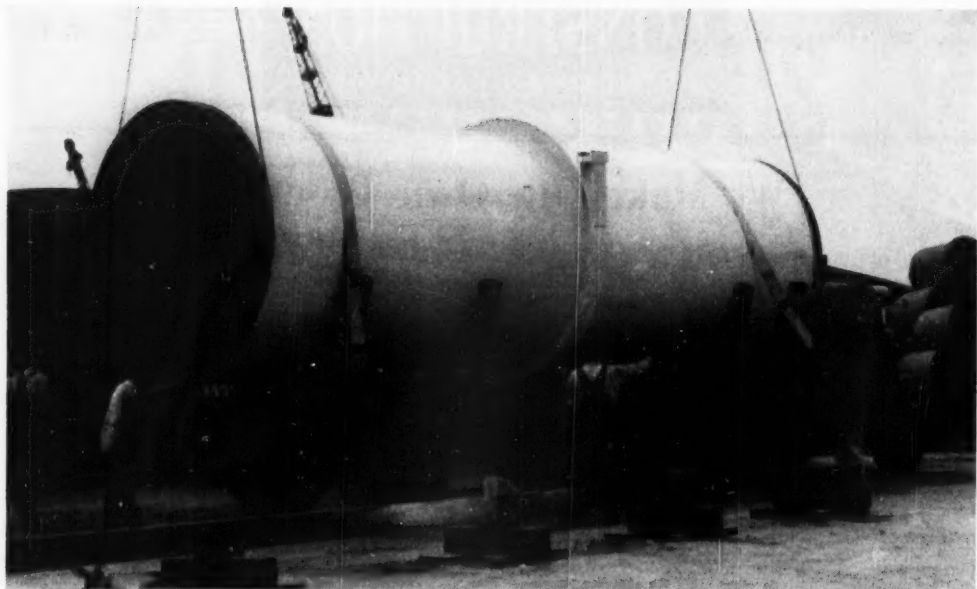
On to Colorado, to find most construction at a standstill due to a carpenters' strike since May 1. All trades were out from May 1 to June 1, but all but the carpenters settled for 5¢ now and 5¢ next January. The wood butchers want 25¢, a raise from \$2.10 to \$2.35. Most big jobs are shut down, and the precariously short Colorado construction season is going to waste. No help to construction in this state either is the D. & R. G. W. RR switchman's strike, for the railroad is the heart of Colorado's transportation system.

So, reflecting up here in the high country amid the murmuring pines, we rebel at man-made problems. If only we could get key management and labor officials up here, if only we could get the dictators and the war-mongers up here—the world's problems (and labor problems) would be solved. For you simply can't stay mad at anybody up here. Not where you instinctively duck at night to keep from bumping into the stars.

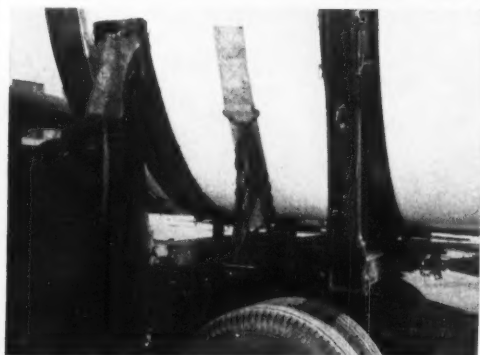
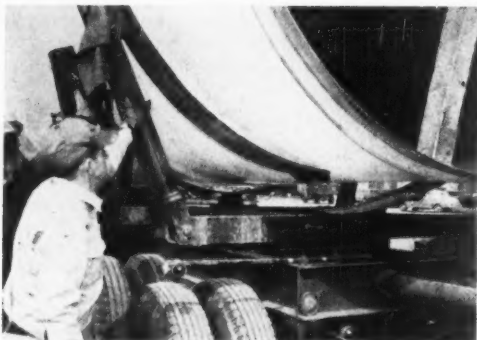
Cheerio, everyone. Pablo's waiting with his pack mule to take this epistle out to civilization.

*Rich*





**BIG PENSTOCK SECTION** is loaded on to special 4-point suspension trailer rig for 300 mi haul to Los Angeles Owens Gorge hydro project.



**EACH OF FOUR SADDLES** consists of steel band, split at lower center (top) for length adjustment to accommodate various pipe diameters, supported by hinged vertical legs at sides of truck and dolly. Hold-down (bottom) between pair of saddles, is webbing held tight by chain toggle.

## Special Trailers Haul Big Penstocks 300 Miles

By **WALDON T. JOHNSON**

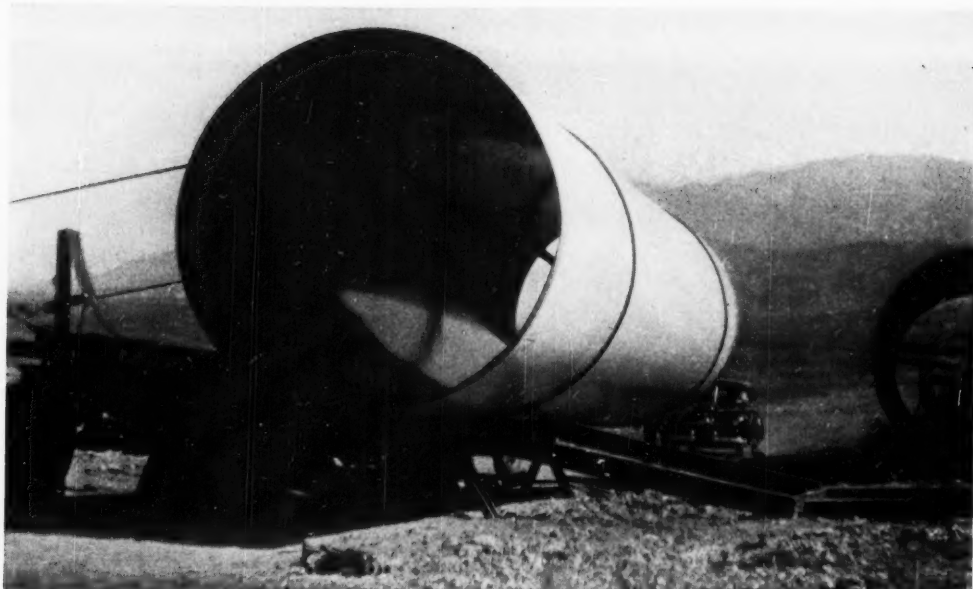
Automotive Engineering Assistant, General Plant Division  
Los Angeles Department of Water & Power

**SEVEN THOUSAND TONS** of steel penstocks, ranging from 7½ to 10 ft dia and from 30 to 40 ft long, weighing up to 25 tons each, had to be moved from a Los Angeles fabricating plant to the city's Owens Gorge hydro development 300 mi to the north in the High Sierra. Wall thickness of the 650 penstock sections, designed for heads up to 771 ft, varies from ½ to 1 1/16 in. Furthermore, 270 sections of 106-in. tunnel liners, 30 ft long and made up of ¾-in. plate, had to be transported to the job.

Working out transportation details was handed to the author. It was a tough job, for relatively the sections were as delicate as eggshells. A bitumastic enamel lining had been spun against the interior surfaces, except at extreme ends, left bare for welding. This enamel must not be cracked by rough handling or deflection of the pipe sections. The pipe could be braced internally only at the ends. It soon became apparent that customary hauling methods could not be used.

Because an entirely new method of transporting the pipe would have to be devised, the following criteria were adopted as a basis for preliminary design:

1. Support the pipe at four points through at least



WHEN UNLOADED without help of crane, lighter pipe-sections are jacked up at ends to free bands, then snubbed down timber ramp

by lines from truck. Saddle legs fold outward and downward to permit pipe to be rolled off truck.

120 deg of circumference to prevent working of the penstock that might damage the lining.

2. Supports should take sections ranging from 92 to 120 in dia, preferably with automatic adjustments to allow rapid loading.

3. Supports should be adjustable to pipe lengths of 30 to 40 ft or more.

4. All supports should be capable of carrying the maximum load but easily adaptable to trucks of various capacities to allow an interchangeability of equipment.

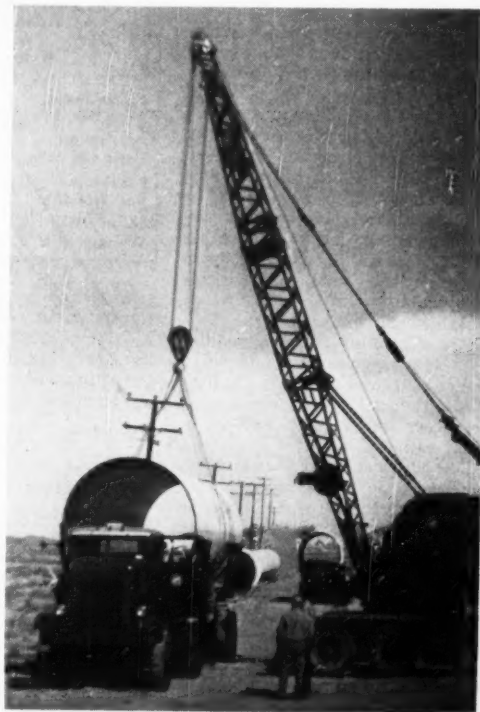
5. The design should allow the load to be rolled off when a crane for unloading is not available.

The design adopted carries the penstock sections in flexible steel bands supported by hinged vertical legs at either end. This arrangement assures required contact and by using pin connections at the bottom of the legs, adjusts itself automatically to various pipe diameters. A sway stabilizer at the lowest point of the band, held by vertical guides on the main framework, allows vertical movement of the band to accommodate the different sizes of penstock and also the slight vertical movement due to road irregularities during transport, but movement in a horizontal plane is eliminated.

For proper load distribution the penstock section is supported in four bands, two at the forward end, two at the rear. Each pair of bands is mounted on a steel frame or saddle. Belt lining on the inside surface of the bands protects the pipe exterior finish.

By attaching a fifth-wheel plate and king pin to the forward saddle and mounting the rear saddle on a pole dolly-type trailer, the necessity for a long trailer is eliminated, resulting in a saving in dead weight and a reduction in over-all height. Distance between saddles can be changed easily for different lengths of pipe section by adjusting length of reach pole.

To permit unloading by rolling the pipe section off



WHEN CRANE is handy, sections are lifted off trailer to speed up unloading. This Bay City truck crane is making short work of handling a big section.



**SADDLE LEGS** are folded inward to bring vehicle width to within legal limits for fast return trip to fabricating plant. On loaded trips special permits are issued for haul during daylight and non-weekend hours only.

the unit, the supporting band has two hinge-type pin connections, one on either side of the sway stabilizer. Unpinning the band (after the pipe has been jacked up slightly) allows one-half of the band and its support leg to drop clear of the load.

The saddle supports the load very effectively and only a minimum amount of load hold down is required, mainly to control vertical movement due to the spring action of the saddle. One hold down is used at each saddle, a 6-in. cotton webbing with D links for adjustable chain ends.

The flexibility of the saddle-pole-dolly combination allows a choice of tractor and dolly capacity to suit the load. Loads were classified according to weight and equipment as listed in Table I.

The 300 mi trip from Los Angeles to Owens Gorge has averaged 13 hr going north loaded, 11 hr for the return trip empty. Since the penstock sections are more than the legal width of vehicles on state highways, special permits were required and travel was prohibited during hours of darkness, rainy or foggy weather and on Saturdays, Sundays and holidays. However, the saddles could be folded inward, to reduce the width of the empty trailers to less than the legal limit; hence the return trip can be made at any time.

#### Load Assignments for Four Tractor Sizes

Unit	Maximum Penstock Weight
2½-ton tractor Single axle dolly	17,250 lb
5-ton tractor Single axle dolly	26,000 lb
5-ton tractor Dual axle dolly	37,300 lb
10-ton tractor Dual axle dolly	51,900 lb

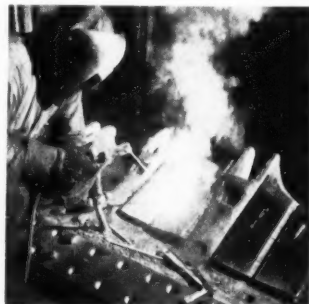
When the job is completed the transportation equipment, despite its special design, will still be of use to the department since, with the addition of a bolster, the dollies are standard equipment for trans-

porting power poles. Some dollies complete with the saddle frames, but with the bands and support legs removed, may be used as steel racks for transporting reinforcing steel.

The job of transporting the penstock and liner sections from the manufacturers' plants in Los Angeles to the project sites was assigned to the Automotive and Construction Equipment Section of the General Plant Division, Power System, Department of Water & Power. As this was written, more than half of the sections had been delivered and the work was expected to be completed well within the estimates for transportation. The saddles were built in the general plant division shops.

#### Hard Steel . . . Long Life

CONTRACTORS J. Robert Bazley Co., Inc., Pottsville, Pa., reinforce their dragline buckets for longer life under impact and abrasion. On this 9-yd Esco scoop, heat-treated steel is welded as follows: (1) To take wear between tooth bases, ¾x17-in. strips; (2) for wear and reinforcing on side cutting edges, 1-in. plates; (3) to reinforce trunnions and prevent sides from caving, large ¾-in. plates; (4) for corner shoes, ¾-in. plate. Steel is Jones & Laughlin Jallo. Bazley welds it with P&H A.W. 2-B low-hydrogen rod, stainless steel coated.





Rig with universal leads drives piles . . .



While hanging over trestle end, but . . .

## Long Outriggers Keep Truck Crane Safe

TO DRIVE  $8\frac{1}{2}$  mi of creosoted timber piles for four trestle bridges, John P. Abramson Construction Co. rigged their Lorain Moto-Crane with special leads and unusual outriggers. The leads let the machine drive plumb and batter piles for a complete bent from one setup. The outriggers let it operate safely over the end of the trestle as construction progresses.

The Abramson firm, of Des Moines, is building the four trestles for the Burlington Railroad's new Centennial Cutoff—a major relocation of their Chicago-Kansas City trackage in northwestern Missouri. The four structures are: Stanley Lake, 57 bents; Grand River Overflow, 42 bents; Bucktail Creek, 13 bents; and Bridge Creek Overflow, 15 bents. They involve 44,200 lin ft of wood piling up to 60 ft long in 6-pile bents, and 411,000 lbm of creosoted structural timber.

An MC 414 Moto-Crane handles the work. It carries steel leads de-

signed and built for the job by Missouri Valley Bridge & Iron Co., Leavenworth, Kan. The leads are fastened to the crane boom head on a swivel which permits them to be swung to either side of the center line; the base of the leads is held by a horizontal steel spreader projecting from the front of the crane turntable. The outboard end of the spreader carries a moon-beam, or steel girder curved in a vertical plane. Thus, when the leads are swung off the vertical, they may be clamped to the moon-beam at any required position for driving batter piles at the correct angle.

The leads handle a No. 2 Vulcan steam hammer. Hammer, leads, spreader and pile weigh  $9\frac{1}{2}$  tons, so the crane's outriggers are set up for extra stability. But the rig works right at the edge of the trestle decking, reaching out to drive the next pile bent, and the usual outrigger feet at the rear would have been beyond the trestle. Therefore, steel I-beams

were fastened to the outrigger screws on each side of the machine and parallel to it. There is normally about 1 in. clearance between outriggers and planking on the deck of the trestle, so the crane has complete freedom of travel. However, when a pile is picked up, the tires compress and the I-beams come to rest on the trestle floor to give a large area of contact. To hold the crane in position during piledriving, the beam outriggers can be blocked to the deck at any point along their length to distribute the load away from the end of the trestle.

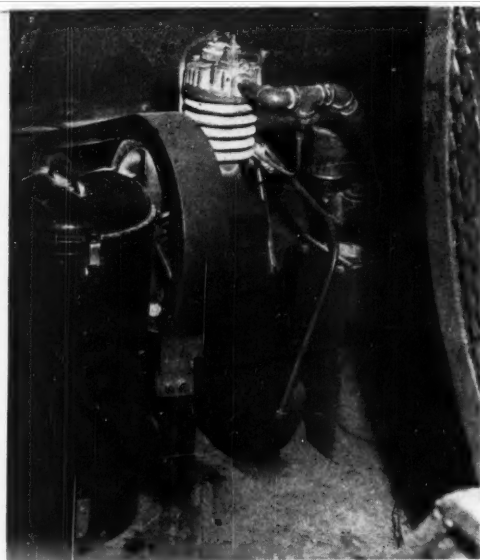
Another safety feature is a "track" of channels and timber, temporarily fastened to the trestle deck, on which the crane rides. This guides the rig and prevents it from skidding sideways on the slippery, creosoted planking. Also, the front of the machine is held to the deck by chain and ratchet lever hoist while driving piles, so it cannot fall over the trestle end.

# One-Shot Lube System Ups Shovel Output 12%

IT TAKES JUST 2 MINUTES to grease 78 bearings on the 5-yd shovel that works Alpha Cement Co.'s Lemay (Mo.) quarry. Secret of the phenomenally fast job is a centralized lubrication system that feeds each bearing simultaneously with the correct amount of grease. It has cut the machine's downtime for servicing from ½ hr to 2 min every 4-hr period, thereby upping productive time by 12%.

The one-shot lubrication system—Lincoln Engineering Co.'s Centro-Matic—is permanently installed on the quarry's 5-yd Marion type 492 electric shovel. It services the rig by delivering individually predetermined shots of Sinclair Pennant No 2 grease to 78 bearings points, as shown in an accompanying table. Motive power for the system is a pneumatic pumping unit that is integral with a container for 60 lb of lubricant. It is located in the shovel cab. Operated by the same compressor that supplies air for the shovel controls, the pump forces grease at 2,500 psi through a single-pipe supply line to lubricant injectors mounted near each bearing inlet. Copper and flexible tubing takes the grease from injectors to bearings. The quantity of grease dispensed to each lubrication point is fixed by individual discharge adjustment incorporated into the injectors.

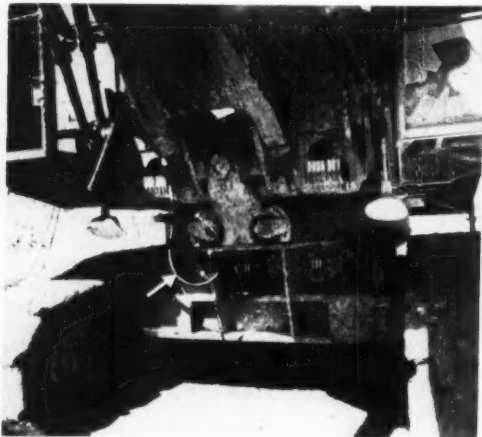
The system is semi-automatic in operation. Flicking a single control lever on the grease container-pump unit in the cab starts the lubrication cycle. A vent valve automatically stops it when all injectors have delivered their shots of grease to the bearings. The



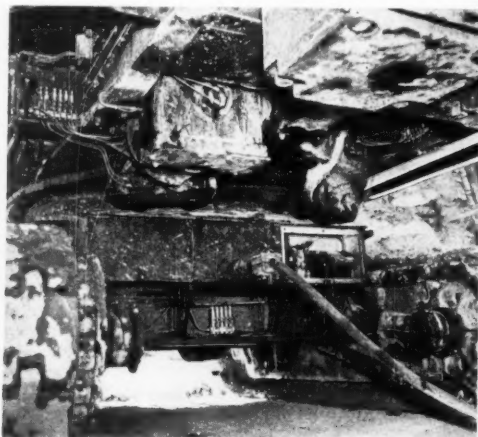
HEART OF CENTRALIZED SYSTEM is pumping unit inside lubricant canister (above left) in shovel cab. This installation is on air-controlled Marion electric machine (right photo) so pump is air-operated by rig's regular compressor (at right of pump-canister in photo above). Where air is lacking, electric pump tied into

valve also vents the supply line, permitting the injectors to recharge and be ready for the next lubrication period.

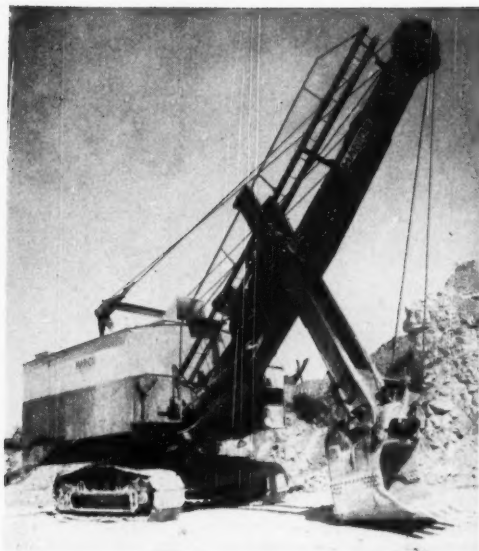
Prior to the installation of the centralized lubrication system, it took a minimum ½ hr to service the shovel with a hand gun. The rig was greased at the beginning and middle of each shift, which meant that it was down for 1 hr out of 8. And three haulage trucks and a primary crusher were also forced to sit idle during this period, waiting for the shovel to re-



BENEATH MACHINE, tubes from injectors feed grease to bearings on hook rollers, hook roller frames, rollers and crawler drive sprockets. Removable ¼-in. flexible hose (arrow), with quick-change



Flex-O-Matic coupler, takes lubricant from line on upper frame to that on lower. When coupler is connected by pushing it on nipple, internal packings prevent entry of dirt into line.



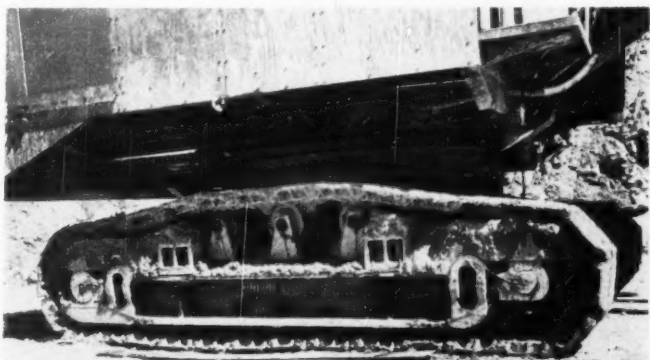
shovel circuit can be used. On diesel machines, electric pump is run by auxiliary generator that powers rig's lights and other accessories. Normal operation of system is at 2,500 psi, but pump is adjustable for pressures up to 4,500 psi. Switch on back of can starts semi-automatic lube cycle.



INSTALLATION ON BOOM lubricates shipper shaft and crowd mechanism. Single grease line from pump in cab feeds into six-unit injector manifold, from which branch lines lead to individual bearings. Flexible tubing runs to outboard bearings of shipper shaft; copper tubing connects to others.

### One-Shot Lubrication

Bearing Location	Type	Number
Shipper Shaft	Sleeve	4
Crowder Hitch Shaft	Sleeve	2
Main Cable Drum	Anti-Fr.	2
Machinery Controls	Sleeve	4
Machinery Shafts	Sleeve	6
Hook Rollers	Anti-Fr.	12
Rollers	Anti-Fr.	6
Hook Roller Frames	Sleeve	3
Foot Lever Shaft	Sleeve	1
Gear Box Shaft	Sleeve	2
Center Journal	Sleeve	6
Crawler Sprockets	Sleeve	4
Crawler Sprockets	Anti-Fr.	2
Crawler Track Wheels	Sleeve	24
<b>Total</b>		<b>78</b>



INSTALLATION ON CRAWLER FRAME lubricates track wheels and out-board bearings of crawler sprocket shaft. Bearings on crawlers and bogey wheels are included in lubrication circuit to protect them from flying dirt and gravel.

sume production. With the Centro-Matic system, the machine is now serviced in 2 min (4 min total per shift) to increase available working time of all units by 12%.

While this saving of equipment downtime is a primary advantage of the one-shot lube job, there are other, less obvious benefits:

- (1) The system does not "forget" to grease a bearing, nor does it under-lubricate it. Thus it prevents premature bearing failure.
- (2) Less grease is consumed be-

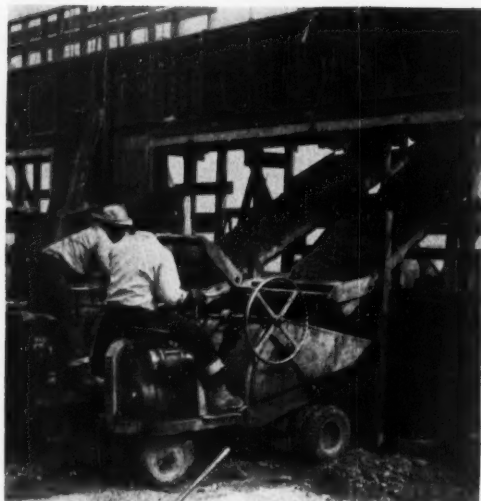
cause the bearing is not over-lubricated. Only the specified quantity is fed it.

- (3) Dirt can not get into the bearing through the grease fitting because the system is closed.
- (4) The possibilities of accidents to personnel are minimized since the system is operated from the cab. This makes it unnecessary to climb the boom, reach into dangerous places, or crawl beneath the rig to service it.

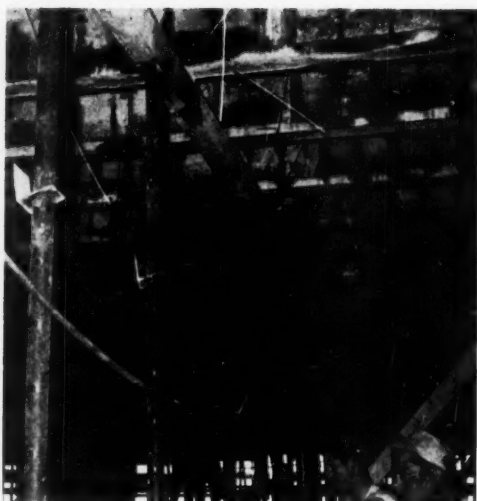
### Parts Storage on Skids



REPAIR PARTS are stored right on the job in these skid-mounted warehouses of W. L. Johnson Construction Co., Columbus, Ohio. Interiors are divided into bins and racks for convenient storage of parts and supplies.



ON UPPER FLOOR of eight-story Los Angeles hospital building, pair of Whiteman Power Buggies takes on load of concrete. Flow from chutes is controlled by simple, pivoted cutoff boards.



BENEATH FLOOR, steel pan forms are merely supported in normal manner despite swiftly moving, heavily laden motor buggies overhead. No extra shores or braces were required.

## Motor Buggies Pour High Concrete

MOTORIZED CONCRETE BUGGIES went topside on construction of the psychopathic unit at Los Angeles County (Calif.) General Hospital—they successfully poured all eight floors of the reinforced concrete building. And only four of the machines did the work of 14 hand-pushed buggies.

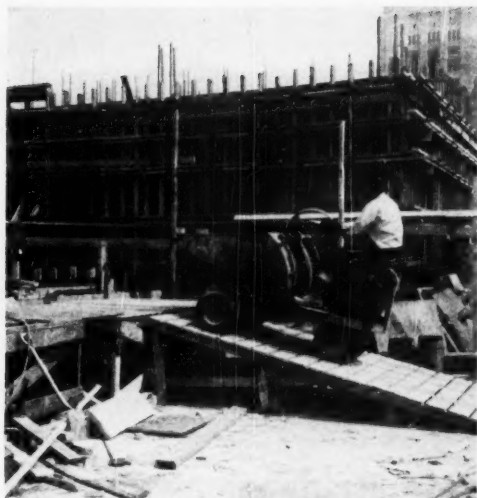
While powered concrete buggies have been commercially available for about three years, there has been a reluctance on the part of some contractors to use them on the upper floors of high buildings. That's because they thought the extra weight and vibration from the swiftly moving loads would require more solid support than was usually provided for the floor slab forms. Also, there was a question as to whether sufficient room was available for maneuvering.

Stanton-Reed Co., Los Angeles, contractors for the psychopathic building, settled these doubts right on the job. They tested two Whiteman Power Buggies on the lower floor pours and, when their practicality was proved, doubled the number.

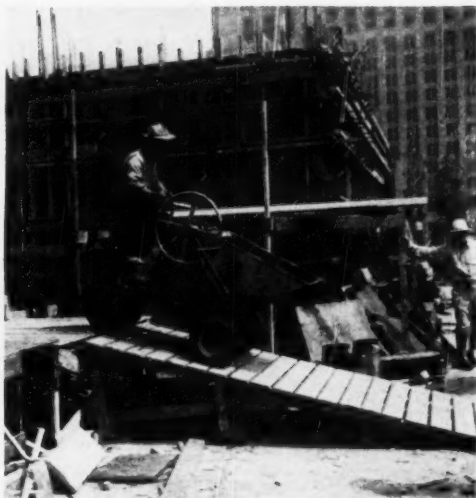
The four buggies poured as much as 280 cu yd of structural concrete in one day. They operated over steel pan forms with only ordinary wooden pads for protection, and the forms were just shored in the normal manner. The buggies went through doorways and up and down ramps without difficulty, hustling concrete to the forms. Accompanying photos show them at work.



EVEN SMALL POURS, such as this stairwell, where mix is so stiff that hand shoveling is necessary, are economically handled by motorized buggy. Four of these rigs placed 280 yd in one day.



TRAVEL UP AND DOWN RAMPS to pour parapet wall is easy. Brakes control downhill travel. Whiteman rig hauls  $\frac{3}{8}$  cu yd, is 82 in. long over-all and 44 in. wide with dual wheels. Single-cylinder



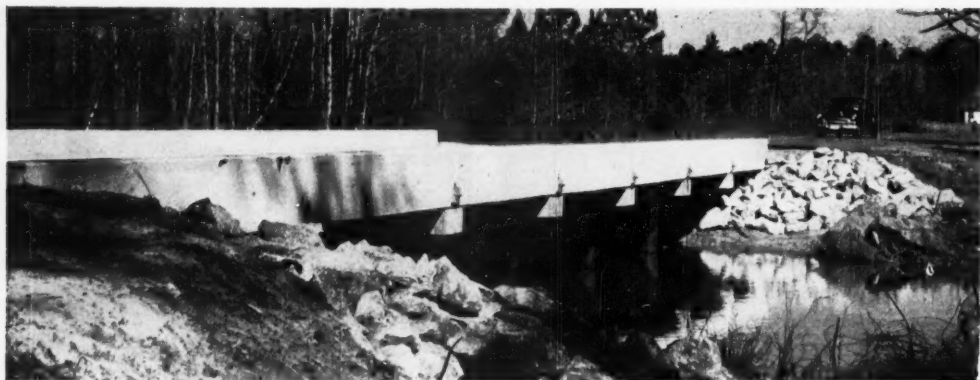
7-hp gasoline engine, which burns 1 gal of fuel in 4 hr under average work conditions, gives it speeds up to 16 mph. Weight empty, and without operator, is just under 700 lb.



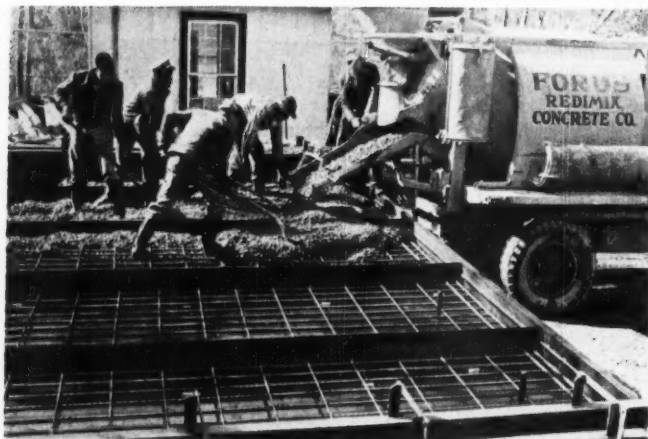
CONCRETE FOR HOSPITAL is batched in Conveyco plant right at job site, and is mixed in Jaeger truck mixers. Supplier figured it was cheaper to set up batch plant than to haul concrete through

city traffic, even though his truck mixers stood idle during mixing period and then moved only a few feet to dump into elevator that hoisted mix to chutes that filled buggies.

Where Streams Are as Plentiful as Jackrabbits, the Answer Is . . .



## Precast Concrete Bridges



FOUR SLABS and two integral curb and gutter forms are accommodated by casting bed, with steel divisor strips set every 5 ft. Deep channels, used as stoppers, limit slab lengths to 14 ft and have 1 1/4-in. pipe welded full length at half-slab height for tiered slots. Criss-cross reinforcing is carried on into curb forms.

TO MEET THE PROBLEM of economical and rapid replacement of many bridges in the coastal section of South Carolina, the State Highway Department is replacing the old wooden spans with precast concrete bridges whose various superstructure members—caps, slabs and curb sections—are made up at the Charleston highway maintenance shop.

Begun as an experiment under the supervision of C. B. Hunter, bridge superintendent in the Charleston district, the idea soon proved worthy and spread to other divisions throughout the state. Cost is roughly equivalent to that of creosoted timber bridges, but installation and upkeep take only a fraction of the time and labor spent on the old wooden spans. Also, when the department decides to relocate a road, they just take the bridge apart and set it up in a new location.

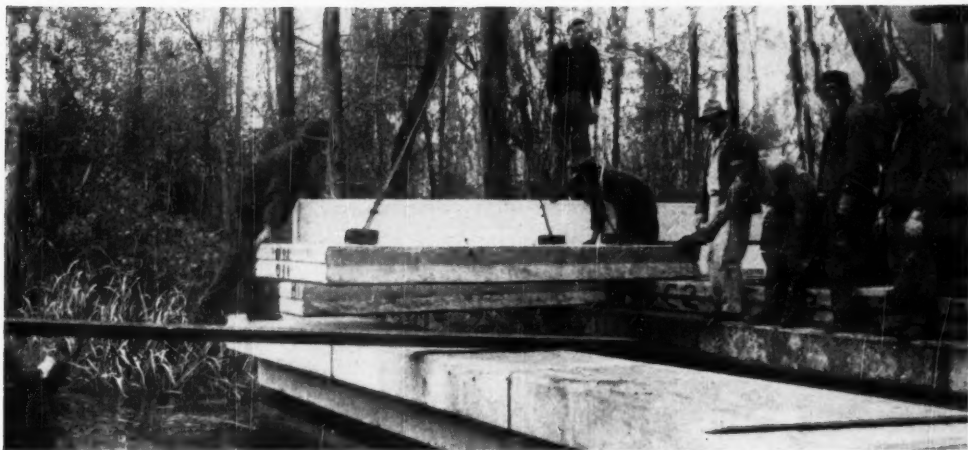
As a rule the structures have 10-



TRUCK WITH 35-FT BOOM loads complete span on special 5-ton FWD truck for transport to site or storage area. Precast caps (right) are bolted to timber piles carefully driven and trimmed to



grade. Cost of bridge matches that of creosoted timber, but fireproof qualities, minimum upkeep, and ability to dismantle for road relocation make this type much more economical.



**THREE-POINT PICKUP** lowers slabs neatly on caps. Tierods, 1-in. dia, are inserted in holes left between butted slabs, and tightened on square bolts to prevent floating of individual units. Joints are

later filled with mastic and entire surface covered with bituminous mix. Six-man crew handles operation at site and installed this seven-span bridge in four days.

or 14-ft spans between bents and an average roadway width of 22 ft 6 in., thus eliminating the need for girders under the 10-in. thick slabs. Small bridge reconstruction is

handled by the state's various divisional maintenance forces, and a six-man crew can set up the pre-cast type in three or four working days with a minimum of equip-

ment, depending on site and size.

This setup covers the two most important items—bridge replacements at reasonable costs, and minimum traffic inconvenience.

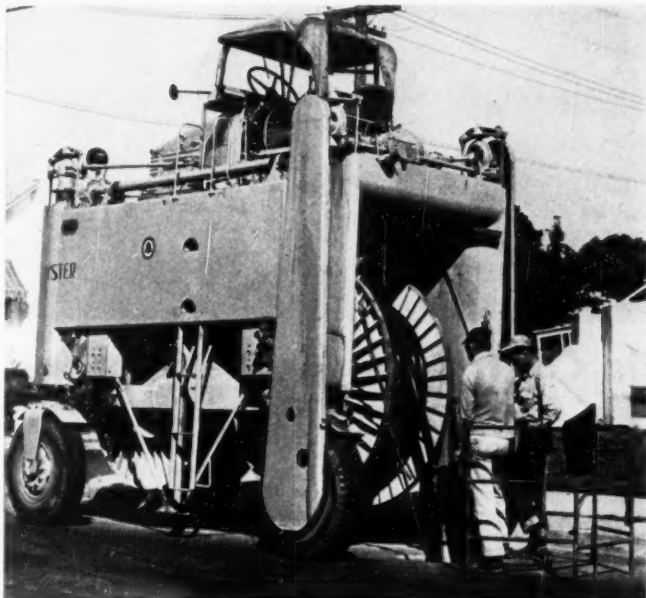
## Straddle Truck Handles Cable Reels

**HERE'S A STRADDLE TRUCK**, but instead of carrying the usual load of lumber it's handling two reels of cable for the Pacific Telephone and Telegraph Co. in San Francisco. The reels, weighing up to 7½ tons each, are carried on spindles which sit in V-shaped saddles on the load tray of the Hyster rig.

When used for a pulling-in operation, a winch, mounted between the two reels, draws the pull line through the conduit from a truck at the far manhole. This pull line is then fastened to the cable, which is paid out as the truck winch pulls it through.

For removing existing cable, a fish-basket cable grip is attached to the winch line and enough old cable drawn out to form at least two wraps on an empty spool. The end is fastened to the reel flange and power for winding is supplied from a sprocket mounted on the winch shaft, through a roller chain and a demountable drive sprocket.

A 9-ft turning radius adds to the truck's maneuverability and it may be driven right up to, or over an open manhole.



**MODIFIED STRADDLE TRUCK** is easily maneuvered up to or over manholes for cable pulling-in and removing operations. Boasting 9-ft turning radius, rig carries two full reels, weighing up to 15 tons, and often sneaks in where other equipment cannot.



## Laundry Sits on <sup>the</sup> New Hospital Site...



## So Contractor Picks It Up and Moves It

ONLY ONE THING stood in the way of the new addition to the Rockingham Hospital in Harrisonburg, Va.,—a three-story, 780-ton brick laundry building. But an aggressive home-town outfit like Nielsen Construction Co. didn't let that faze them. They just picked it up and moved it!

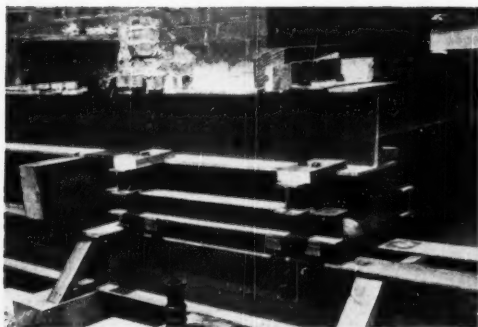
First off, they built a steel frame

to support the weight of the building through timber needles. Next they leveled the travel route and constructed five parallel concrete runways, each topped with oak ties and a pair of deep I-beams for rails.

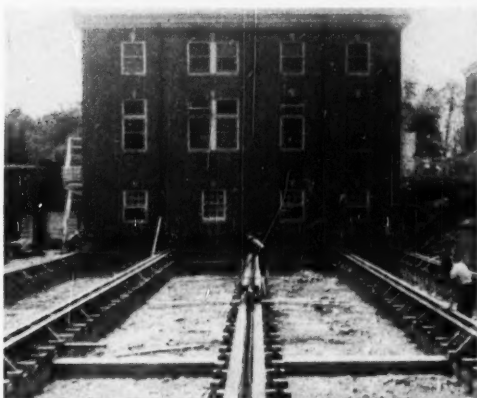
They then designed and used 16 dollies, made up of four 5-in. rollers in a light steel frame; reeved

up two five-gang blocks; fastened one to the building and the other to a dead-man sitting under a Marion back-hoe, and moved the whole works with an International TD-14 diesel crawler pulling at a 45-deg angle.

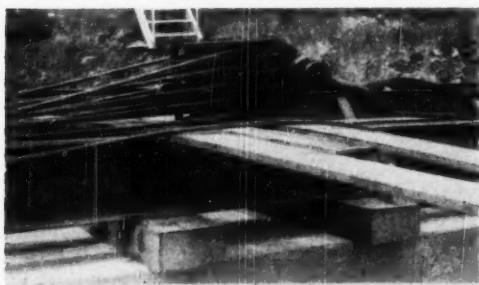
The dollies were made from four 4-in. WF steel beams. Rollers were 16-in. lengths of 5-in. extra heavy



**1 Steel frame sits on special rollers...**



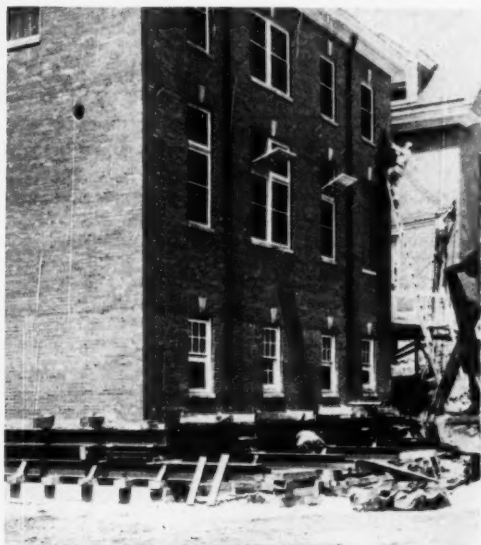
**2...which run on five parallel tracks...**



**3...moved by bulldozer and 10-part line.**



**4 Three successive bites move it 150 ft...**



**5...to end of line above new foundation.**

pipe with a 2-in.-dia steel shaft. Each dolly was clamped to the steel frame encircling the building, to prevent side movement. A heavy timber was spiked to the upper steel frame behind each dolly, with only  $\frac{1}{4}$ -in. clearance above the track beam. Thus if any dolly failed, the maximum drop of the building would be only this  $\frac{1}{4}$  in. Crushing of the oak ties and deflection of the dolly frames were calculated and proved just right for

even bearing all around the heavy brick structure.

The time element was most important since the upper floor of the building contained nurses' living quarters and the second floor the laundry facilities for the entire hospital. The ground floor had been used for general storage, which added greatly to the weight factor, but despite the weight and the myriad of plumbing connections, only 3 hr, 45 min elapsed from the

time the utilities were cut away until they were replaced in the new location. Periodic inspections since moving have revealed no cracks or structural failures in the masonry building. Planning and engineering were supervised by Joe Nielsen, owner of the Nielsen Construction Co. in Harrisonburg. M. E. Hosafloek was construction superintendent and D. P. Davis Jr., job engineer. Mr. Davis supplied the photos and information.



BUTANE-FUELED RIGS of Griffith Company—cranes, transit mixers, trucks, scrapers, etc.—are kept in top condition by one responsible butane expert. Satisfied with results after trial conversion on trucks

for dam project in 1935-38, Los Angeles contractor continued changeover; now has 55 converted rigs, from White 6- and 10-wheel trucks to Lima crawlers.

## Liquefied Petroleum Gas vs Regular

By JIM JOSEPH, Los Angeles, Calif.

LOTS OF CONTRACTORS have heard about LP gas—liquefied petroleum gas—and its advantages in fleet maintenance and lower operations cost, but most all of them have decided to wait and see. Now from Griffith Co., one of California's larger contractors, comes a satisfactory performance tale of 55

butane-fueled rigs, ranging from White 6- and 10-wheel trucks to big Lima crawlers. And the interest is spreading.

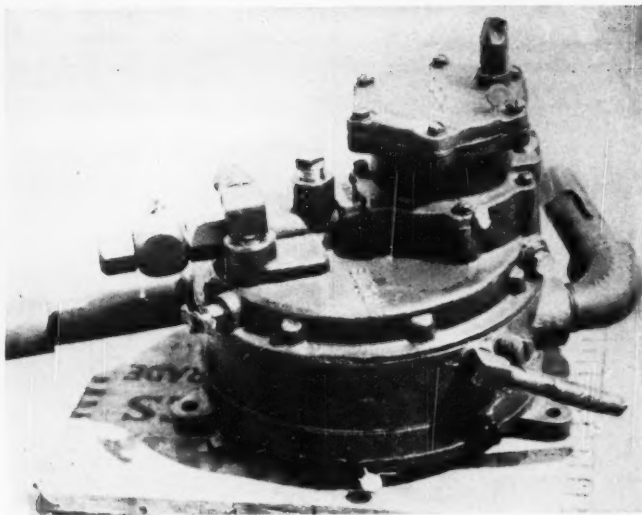
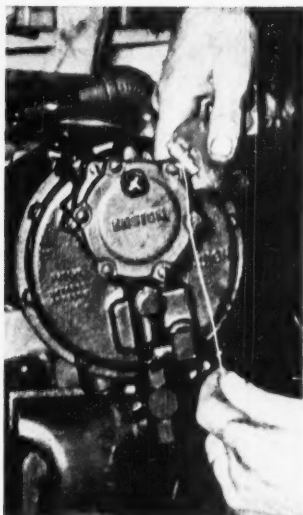
Let's see why! First of all the price has dropped—8 to 9 cents per gallon less than regular gasoline on long-term contracts. Secondly, we're sure of an adequate

supply—3 billion gallons sold in the U. S. last year, a 15-billion gallon yearly supply from natural gas sources plus a 20 billion gallon potential promised from gasoline manufacturing process. Third, proved savings above conversion prices in maintenance of construction equipment—one



SPECIAL 300-GAL TANK for butane gas enables this Lorain Moto-crane to work for long periods in field without refueling. Conversion

expenses are soon made up with decreased maintenance costs, fewer overhauls, no sparkplug cleaning, less oil impurities



LEAD SEALS, with company's insignia, are attached to regulator-heat exchanger unit. Three seals prevent (1) removal of oil regulator, (2) access to oil control, (3) removal of cover. Four similar

seals on carburetors insure proper performance and prevent amateur "tinkeritis." Shopmen have not removed a carburetor for 4½ yr, except for display purposes.

engineering company stipulating a 25% reduction in maintenance costs and 50% increase in engine life when converted to butane.

Griffith first tried LP gas on a fleet of 30 BX-Macks on the Caljaco Dam project near Riverside, California, in 1935-38. Since then they have experienced decreased maintenance costs, fewer engine overhauls, greater mileage between oil changes, fewer sparkplug failures, and generally longer engine life. They warn that it won't work miracles, however, and revive a

machine with a worn-out engine.

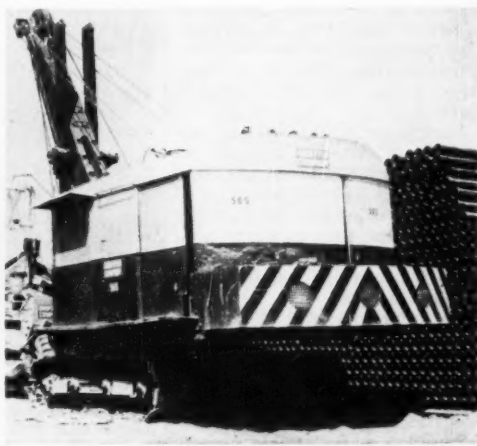
Shopmen for Griffith claim that a butane-fueled rig will show a 2 to 1 performance increase over a standard gasoline rig, all other things being equal. Three main reasons for this are: (1) Greater power from butane and almost no lube oil dilution, (2) no carburetor troubles because it burns as a vapor instead of a gas, (3) Griffith's own system of sealing units to prevent "tinkeritis," thereby placing responsibility of all adjustments on one specialist.

Routine maintenance should include: (1) Disassembling and cleaning all butane and electrical components with every engine overhaul; (2) no cleaning of spark-plugs, but replacement every 15 to 20 thousand mi (often plugs run longer if routine inspection allows); (3) cleaning butane filters every 20,000 mi; (4) checking air-to-fuel ratios with a fuel analyzer every 4 to 6 months, maintaining a specification ratio of 13 to 1.

Cost of butane installations has often discouraged conversions. The



NEW DISPENSING UNIT pays out 35 gpm. Los Angeles yard uses 6,000 gal per week; field stations 5,000 more. Waukesha-Hesselman



multi-fuel 6-EKH engine in Lima crawler (right) hasn't needed overhaul for over 3 yr of continued operation.

## Robert K. Tomlin Dies, Former Editor of C. M. & E.

company admits that for long hauls, heads should be milled and high compression pistons installed to take full advantage of the 100 to 125 octane rating. For short hauls, however, they feel that milling and piston installation probably aren't necessary.

Approximate conversion costs run \$150 to \$170 and include:

- (1) Butane tank—usually 75 gal—costing \$75 to \$112 depending upon number of conversions.
- (2) Copper line, 3/8 in. dia, from tank to filters to regulators.
- (3) Regulator - heat exchanger unit, with automatic fuel shutoff when oil pressure falls.
- (4) A butane carburetor.

Butane conversion can be handled by one mechanic during an 8-hr shift. In a recent test, they analyzed lube oil which had run 10,000 mi in a White dump truck and found it free from impurities. In other cases 10,000-mi oil from a butane-powered rig has been used for another 10,000 mi in a gasoline rig. Griffith's prize example is a Waukesha-Hesselman multi-fuel Model 6-EKH engine in a Lima crawler crane which hasn't needed a major overhaul in three years of constant operation. Shopmen haven't changed a carburetor in 4 1/2 yr.

### Lead Seals Prevent Tampering

Seven "hands off" seals prevent unauthorized field men from tampering with the various adjustment screws or regulators. Lead seals have the company's imprint which is registered with the state. Tampering brings penalties—even discharge.

Another argument against butane and propane has been that it gives less mileage than gasoline. Griffith's operators say equal mileage can be expected, but probably no more. But, they hasten to add, the difference is made up in reduced fuel cost and simplified engine maintenance.

Best time to convert to butane is when the engine is new; next best time—immediately after a motor job. William Hillmer is manager of equipment for Griffith, and T. M. McKinney handles butane, carburetion and electrical equipment. George Robinson is yard superintendent.



ROBERT K. TOMLIN

ROBERT K. TOMLIN, editor of *CONSTRUCTION METHODS AND EQUIPMENT* from 1927 to 1946, died July 4 in New York City at the age of 64 after a lingering illness. He was a graduate of Harvard Engineering School, and served as an engineer on the Pennsylvania East River tunnels and the Catskill Aqueduct tunnels for the New

York Board of Water Supply prior to joining the editorial staff of *Engineering Record* in 1909.

During World War I Tomlin became the first technical war correspondent to cover the battlefronts of Europe. He became Managing Editor of *Engineering News-Record* shortly after that magazine was founded as a combination of *Engineering News* and *Engineering Record* in 1917. Soon after McGraw-Hill acquired *Successful Methods* in 1926, he was made editor of its successor, *Construction Methods*. He served as editor until ill health required him to relinquish active direction of the magazine in 1946. Tomlin is credited with development of the photo-technique of construction magazine publishing, which this journal follows today.

On January 1, 1950, Tomlin gave up all active participation in the editorial field, but retained the position of consulting editor to this magazine.

He was a member of the Moles Society, Harvard Club, American Society of Civil Engineers.

### Truck Body on Rail Car Handles Harsh Mix



MOUNTED on standard flat cars, Dumpcrete bodies haul concrete from mixer to cableway bucket at Big Creek Dam for Southern California Edison Co. on San Joaquin River. Ford V-8 engine and pump on car actuate 4-yd bodies' hoists; are controlled by operator of 20-ton gasoline locomotive that moves car. Thus, it's a one-man

operation. Discharge chutes have been completely remodeled to handle harsh, 11 1/2-in.-slump concrete (all aggregate is crushed, maximum 6-in. size). Dumping time averages 10 sec. Contractors are Bechtel Corp. & Morrison-Knudsen Co. for whom H. L. Leventon is construction manager. John R. Kiely is project sponsor.

# WICKWIRE ROPE

A PRODUCT OF

**CF&I**

**Ask any user...you'll find them everywhere**

In scores of industries, users of Wickwire Rope have developed an affectionate respect for its performance, safety and long life. And, for true economy, they use Wickwire's **WISSCOLAY®** Preformed. It lasts longer—is easier to cut, splice and install. It's kink-resistant and safer to handle. Wickwire Distributors and Rope Engineers, in key cities everywhere, are prepared to render prompt service in meeting your wire rope needs. Wickwire Rope Sales Office and Plant—Palmer, Mass.

**IN THE EAST**—Wickwire Spencer Steel Div. of C. F. & I.  
500 Fifth Ave., New York 18, N. Y.

**IN THE ROCKIES**—The Colorado Fuel and Iron Corp.  
Continental Oil Bldg., Denver, Colo.

**ON THE WEST COAST**—The California Wire Cloth Corp.  
1080—19th Ave., Oakland 6, Cal.



**TRANSPORTATION**



**LOGGING**



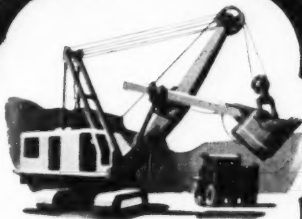
**MINING**



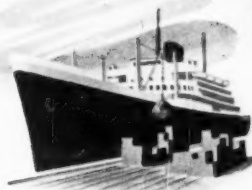
**PETROLEUM**



**MANUFACTURING**



**CONSTRUCTION**



**MARINE**

# 4 questions every dump truck user should ask about new International 6-wheelers

**QUESTION:** "I hear new Internationals are heavy-duty engineered. What does that mean to me?"

**ANSWER:** "Heavy-duty engineered" means that extra stamina and durability are built into every one of the thousands of parts that go into new International 6-wheel Trucks. This gives you the long life and savings in operation and maintenance that have kept Internationals first in heavy-duty truck sales for 18 years.

**QUESTION:** "What other assurance do I have that new International 6-wheelers will do a good job on my particular job?"

**ANSWER:** From new valve-in-head engine to new bogie assembly, every new International 6-wheel Truck is *specialized* for years and years of outstanding 6-wheel truck performance. In addition, every model has been *proved* right from every standpoint in actual 6-wheeler operation.

**QUESTION:** "What do new Internationals offer in the way of new advancements?"

**ANSWER:** You get the new Comfo-Vision Cab—"roomiest cab on the road." You get the new third differential that eliminates the need for an extra propeller shaft and a power divider, thereby reducing truck weight. You get new Super-steering and new Super-maneuverability for easier handling and turns in the shortest practical circle. You get a new valve-in-head engine, new frame, new improvements from bumper to tail light.

**QUESTION:** "Where can I find out *more* about how new International 6-wheel Trucks will cut my hauling costs?"

**ANSWER:** Get in touch with your nearest International Truck Dealer or Branch. He'll gladly give you facts and figures on the right 6-wheel model for you.

International Harvester Builds McCormick Farm Equipment and Farmall Tractors... Motor Trucks Industrial Power... Refrigerators and Freezers

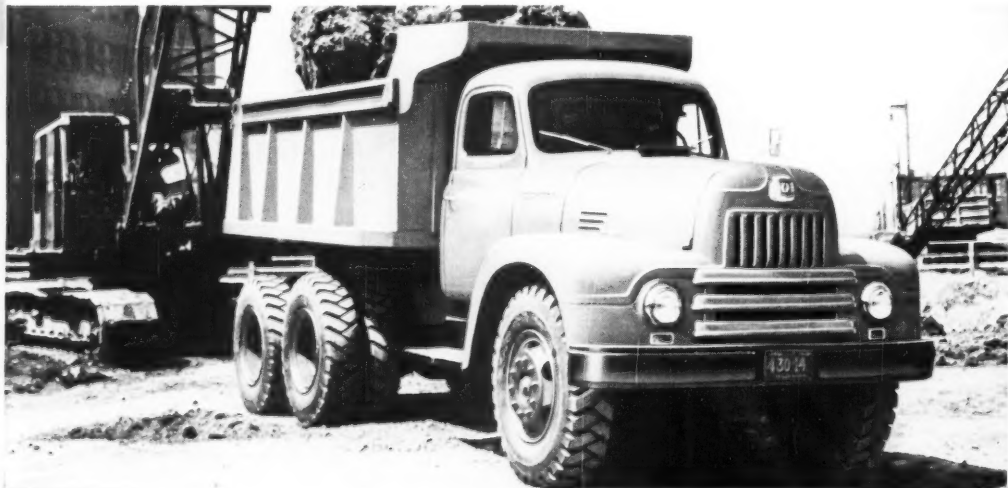


Tune in James Melton and "Harvest of Stars," NBC, Sunday afternoons

**ALL NEW, ALL PROVED**

## INTERNATIONAL TRUCKS

INTERNATIONAL HARVESTER COMPANY CHICAGO



## LEGAL DECISIONS CONCERNING CONSTRUCTION



### The Posthumous Payment

"DAD GOT YOUR BILL yesterday, and wasn't feeling very well this afternoon. Told me to stop on my way and give you this check."

The contractor gathered in the check. "Thanks, and I'll give him a receipt the first time he's in the office. Nothing serious, I hope?"

"Oh, no, just feeling a bit out of sorts," the boy assured him, and the next morning the contractor presented the check for payment at the local bank on which it was drawn.

"Cash or deposit?" the paying teller queried, when the town encyclopedia hustled in.

"Hear about Peter Wasson dropping out this morning?" the encyclopedia demanded.

"Not dead?"

"Yes, Dr. Mack told me on his way back from the house."

"His boy told me he wasn't feeling well yesterday, but that it was nothing serious."

"Weak heart—I've been expecting it for months," the traveling newspaper announced, and departed to spread the news.

"That'll be a great shock to the family, but what about this check of his?" the teller demanded.

"Didn't you just ask me whether I'd take cash or deposit it to my credit, and that certainly meant that you were to pay it," the contractor answered.

"I didn't know then that Wasson was dead," the teller explained.

"What difference does that make?"

"I've always understood that the

death of the drawer revokes the authority of a bank to pay a check, and that the bank that paid with the knowledge of the drawer's death does so at its peril," the teller averred.

"I'm neither a banker nor a lawyer, but that's a new point to me."

"I'm not sure about it myself, but I'm going to play safe, and not pay the check until I know exactly where we stand," was the teller's final word.

And the teller made no mistake in refusing payment, as while there are decisions both ways on the point, the weight of authority in the American Courts is that the death of the drawer of a check, to the knowledge of the bank, revokes the bank's authority to pay his check, even though there are sufficient funds for that purpose.

"Where money has been paid under a mistake as to a material fact, to one not entitled thereto, and who cannot in good conscience receive and retain it, the law raises an implied promise on his part to refund it, and an action will lie to recover it," is the legal finding in *Elgin v. Gross-Kelly Co.*, reported in *L. R. A. 16 A. 711*.

### The Doubtful Owner

"HERE'S A CHECK for \$915 to square up my account," the owner stated.

"Thanks," the contractor told him. The owner went down to the local bank and deposited \$915 to his credit.

"It's to pay a check given to the contractor and for nothing else," the owner explained.

"Sure," the teller agreed, gathered in the cash, and the owner left town "between two days."

The next morning one of the owner's checks for \$905 in favor of a local garage was paid by the assistant teller in blissful ignorance of the aforesaid arrangement. When the teller returned, the mistake was discovered.

"The contractor's check's just got to be paid," said the teller. "Simply credit the amount of the garage check back to the owner's account, cancel the credit on the garage account, and see that the contractor's check's paid when it comes in."

"I suppose I'd better notify the

garage man of what we've done?" the assistant suggested.

"Sure."

"I'll bet half an hour's salary he hustles off to see a lawyer to see if he can't hold the bank," the assistant prophesied.

"Let him, I don't know anything about the law but we'll take our chances."

And the bank and the contractor were safe as the lawyer explained that the money must be applied according to the owner's instructions.

"The proceeds were deposited in said bank to the credit of the makers of the note for a specific purpose. No part of such funds, under the law of such deposit, could be diverted or applied by the bank," says the Kentucky Court of Appeals in *First National Bank v. Prickett*.

### The Unprepared Lease

"I'LL GIVE YOU A LEASE of the Briscoe office for five years at a rental of \$200 per month," the owner proposed.

"Call it \$150, and you've rented to a satisfactory tenant," the contractor suggested.

"Split the difference and call it \$175."

"Good enough," the contractor agreed.

A week later the contractor telephoned the owner.

"Have you got that lease ready," he queried, "I have been waiting for you to present it ever since we made the deal."

"And I have been waiting just as long for you to present it to me for my signature," the owner declared.

"No, it's your duty to prepare the lease and tender it to me."

"Not on your life, I have done enough renting business to know that the tenant is to pay for preparing the lease and present it to the landlord to sign," the owner averred.

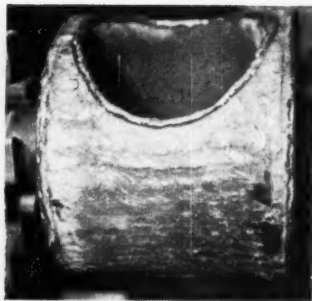
The contractor was right on this point, however, as the general rule is that when the landlord agrees to give a lease, it is his duty to have it prepared and tender it to the tenant for his signature. One leading case laying down this rule is the Massachusetts decision reported in 28 N. E. 226. as *Freeland v. Ritz*.



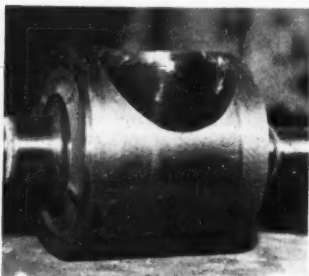
DISCHARGE VALVE from Rex Pumpcrete machine has been severely grooved by abrasive concrete. Use now will cut output.



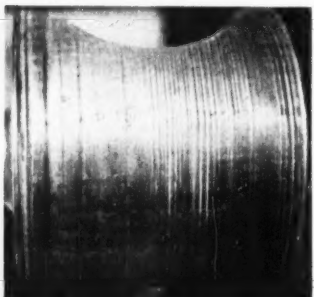
WORN UNIT has been cleaned, preheated, hard-faced with Stoodite, slow cooled, and is now ready for grinding.



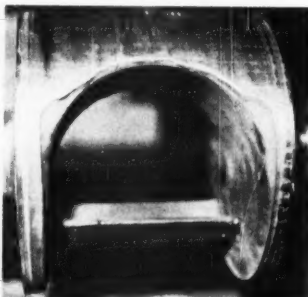
REAR VIEW of discharge valve shows neat weld application. So shaft would not warp, welds were quartered every third bead.



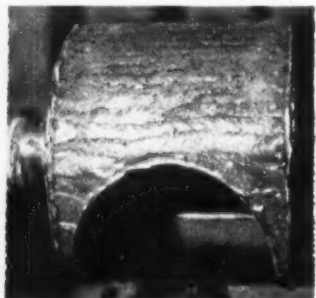
AFTER GRINDING in lathe, valve is ready for more service. Diameter has been built back to 10 in. from worn 9 3/4-in. state.



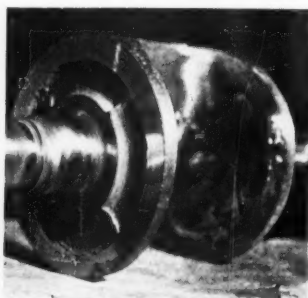
INTAKE VALVE from same Pumpcrete machine also shows plenty of wear. But then, it has pumped plenty of concrete in its day.



BEFORE WELDING, length of angle iron is tacked between cheeks of valve to prevent warpage of unit during hard-facing.



HARD-FACING has been applied to worn intake valve to bring its dimensions above standard so it can be ground to right size.



REBUILT VALVE will give long service, according to Cook Construction Co., who have all their worn Pumpcrete valves hard-faced.

## Hard-Faced Pumpcrete Valves Give Extra-Long Service

BY HAVING THE VALVES of their Pumpcrete machines hard-surfaced, Cook Construction Co. has increased the service life of the valves tremendously. And the cost of building the extra-long life into the worn-out units is less than half

the cost of a new set of the valves.

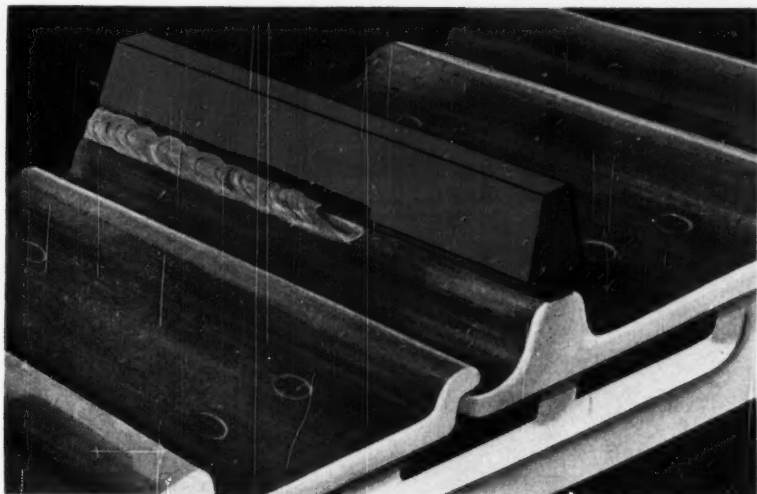
The Minneapolis contractors use a Rex Pumpcrete machine for concreting their hard-to-reach pours. Rapid operation in abrasive concrete wore out the pump's valves in a short time, reducing their gage and lowering the machine's efficiency. So worn valves—both intake and discharge—were sent out to Alloy Hard-Facing Co., Minneapolis, for rebuilding and hard-surfacing.

First, the valves were thoroughly cleaned and preheated to 1,200 deg. F. Then, about 20 lb of 1/4-in. coated Stoodite was applied by electric arc method while the valves were maintained at a maximum temperature of 700 deg. The hard metal application required approximately 10 hr for the two pieces. The hard-faced units were then slow-cooled in a lime box, and refinished to their original shape by grinding.

The Stoodie hard metal applied, plus welding time and grinding costs, totaled only \$170 for the complete rebuilding job on a pair of inlet and discharge valves. A new set of valves costs \$360 (\$165 for inlet, \$195 for discharge).

The rebuilt valves have as yet shown no signs of wear, and from all indications should outwear several sets of new ones to bring about a substantial maintenance saving. In addition, Cook's Pumpcrete operators say the machine performs better than with standard replacement valves; surge and pressure leaks into the feed hopper have been eliminated. — *From Fusion Facts*

# STRIP FOR *Traction*



## Restore Gripping Power to Worn-down Grousers **THIS** Way!

When tractor grousers become worn down more than an inch, the tractor wastes power. This means fewer pay loads per day, and increased wear on the track. The solution is quick and easy. Install Marquette Tractor Strip!

Tractor-Strip is made of special carbon manganese steel. The bottom is pre-formed for quick, efficient welding to the worn grouser edge. After welding, the grouser is as strong as the original.

Any welder with average ability can easily do the job. Use any high grade

all-purpose steel electrode, either A. C. or D. C.

Tractor-Strip comes in random length 10 to 14 foot bars, and 2 sizes to fit ANY caterpillar type tractor. Ask your jobber, or write today, for specification sheet which gives complete information about various tractor models, number and width of grousers, and footage of Tractor-Strip required.

*Price 25½¢ per lb. 3¢ per lb. additional if cut to Grouser size.*

**GET IT FROM YOUR JOBBER**

**MARQUETTE  
TRACTOR STRIP**

**MARQUETTE  
MANUFACTURING CO., INC.**

307 East Hennepin Avenue  
Minneapolis 14, Minnesota



SELF-POWERED SCRAPER plows through loose sand to scoop full load into bowl. R. G. LeTourneau field engineers conducted ex-

tensive field tests to determine proper tire pressures and correct loading procedures for handling this tough material.

## How to Load Self-Powered Scrapers in Sand

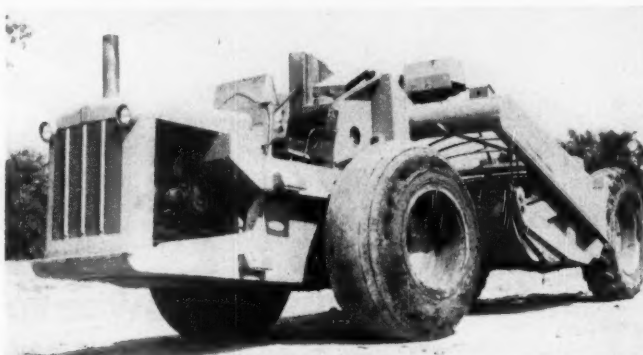
By R. C. GESSEL

Field Engineer  
R. G. LeTourneau, Inc.  
Peoria, Ill.

**TOUGH TO HANDLE** in any form, sand is extremely hard to move. It is difficult to load, hard to haul through, and tough to spread. It is loose, shifty, abrasive, and wearing on exposed parts—all of which makes it slow and costly to move.

During the last year, however, R. G. LeTourneau, Inc. has been conducting extensive tests on the ability of its model D Roadster Tournapull (a 9-ton or 7-cu yd rig with a 122-hp engine) to load itself in sand. And they believe they have the answer. Large, low-pressure tires without lugs (which have a tendency to dig in) are a big factor in the successful handling of sand by equipment mounted on rubber. In conducting the tests, the machines were checked in actual on-the-job performance under the most difficult conditions available. These include Michigan dune sand, Illinois blow sand, and desert sand in Texas.

Test results show that when the D Roadster is equipped with 65-in. wide-base drive tires and 56-in. wide-base trailer tires it will move sand efficiently and econom-



**BIG WIDE-BASE TIRES** on drive wheels are one secret of efficient operation in sand. Low pressures and smooth tread let them float and pull without digging themselves into ground. This D Roadster Tournapull rides on 65-in. tires.



**PUMPING SCRAPER BODY** up and down rapidly is another step in sand loading technique that proves successful. During this operation, blade should not be lowered so deep that tires spin. Load will be topped out by increasing rig's momentum.

ically. The wide-base tire permits extremely low air pressures, enabling the tire to spread out over a larger area, insuring greater flotation and traction. Thirteen scrapers so equipped have proved themselves and are currently working sand for Michigan contractors.

Following are the results of the widely scattered tests. The weighed pay loads listed are representative of many obtained in various sand operations in level loading:

### Job No. 1

Material: Wind-blown dune sand  
(Continued on page 74)



# Save on Swing

with  
**MAGNETORQUE\***

**LOOK TO P&H FOR ADDED VALUES!**

Faster digging cycle... up to 20 percent faster... is yours with the P&H Magnetorque® electric swing. Only Magnetorque can give you faster, smoother starts and stops that make this possible. It means greater production, lower cost, and more profits. You'll say it's the greatest advancement ever made on large draglines and shovels. You can say good-bye to swing friction troubles... once and for all. Power is transmitted electro-magnetically... there's no friction... there's no wear... and far less time-outs to rob production. The smooth operating Magnetorque lasts the life of the machine.

On all kinds of digging the Magnetorque can help you cut yardage costs. Magnetorque electric swing is standard on the P&H 1055 (3½ cu. yds.) and the new 955-A (2½ cu. yds.). Write today, for more information.

\*T.M. of Harnischfeger Corporation for electro-magnetic type clutch.



EXCAVATORS • OVERHEAD CRANES • ARC WELDERS AND ELECTRODES • SOIL STABILIZERS • CRAWLERS AND TRUCK CRANES

# CHAMPION

## WORKIN'EST

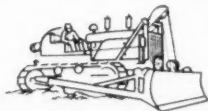
Here are some of the exclusive features that give the TD-24 its matchless work capacity:

1. 180-h.p. International diesel engine with gasoline-conversion starting and unmatched "lugability".
2. Synchromesh transmission for easy shift-on-the-go operation; plus eight speeds forward and eight reverse.
3. Planet Power drive, smooth and rugged, for instant speed change up or down one gear without declutching.
4. Planet Power steering to provide power on both tracks in gradual turns and permit feathered or pivot turns.
5. Separate reverse lever for quick change of direction of travel in any of the eight transmission speeds.
6. High-speed track assemblies with new recoil mechanism that holds front idlers in position against full-load track pull.

*The NEW*  
**TD-24**

**CRAWLER TRACTORS • WHEEL TRACTORS**  
**DIESEL ENGINES • POWER UNITS**

**Standardize  
on Power  
that Pays**



# of Crawlers

## TRACTOR ON ANY JOB

● "THE TD-24 is definitely outhauling every other tractor on the job. It will do so much work that we are sure our job costs will show a great saving!" That's the report of the foreman on the 247,000-yd. University of Maryland stadium project. ● "I don't have to stop on any grade," the operator reports, "and we have 25% or better on this job. Why, I just go up in 4th gear easy

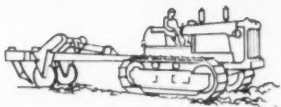
while the other tractors have to switch to low to make it." And the TD-24 hauls a 17-yard scraper, heaped! ● Yes, the TD-24 is the "workin'est tractor" on any job. Yet, its operator is the worker with the easiest day! See your International Industrial Power Distributor. Get a TD-24 demonstration. Discover how you, too, can save job time, cut costs, earn extra profits.

INTERNATIONAL HARVESTER COMPANY • Chicago

*Tune in  
James Melton and  
"Harvest of Stars,"  
—NBC, Sunday  
afternoons*



## INTERNATIONAL INDUSTRIAL POWER



If you do  
big construction  
you need this  
**LOW-COST  
PRECISION TRANSIT**



Price Only \$400 Complete with Tripod. With "A" Standard and Compass — \$425.00 F.O.B. Factory

**The David White Western  
Precise Preliminary Transit  
gives you wide Versatility  
for Engineering and  
Surveying**

Why do you need this instrument? Because, no other instrument gives you the precision, the easy, fast working facilities for a variety of engineering and survey work at so low a cost.

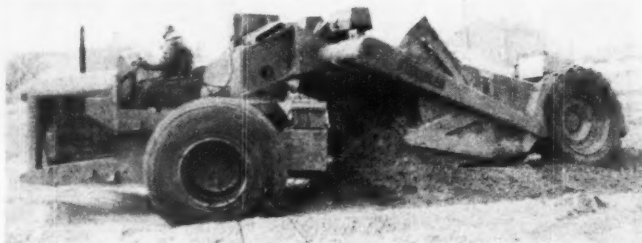
Telescope 9 $\frac{3}{4}$ " long, dust and dirt free internal focusing — coated optics — erecting eyepiece, and a magnifying power of 20 diameters. Horizontal Limb 5 $\frac{5}{16}$ " Dia. with 1 Double Vernier Reading to single minutes. Vertical Circle 4" Dia. with guard. It can be used equally well on long distance or close work.

If you're in the market for a new preliminary precise transit, investigate the David White Model No. 7064-U illustrated above. Compare its many features and its price to all others. You'll like what you find out! See our nearest dealer or write direct. Free Bulletin No. 1050 will give you complete details on this and David White's complete line of fine engineering instruments. David White Co., 343 West Court St., Milwaukee 12, Wis.



We offer complete, prompt repair service on all makes of instruments — levels, transits, theodolites, etc.

**LOADING SCRAPERS IN SAND . . . continued**



**SAND IS SPREAD** just like any other material. It can be deposited in controlled lifts, or dumped all at once in a hurry, as shown here.



**RUBBER-TIRED BULLDOZER** with 56-in. tires on all wheels has signal success handling sugar sand, which is similar to Michigan dune sand. Here, Tournadozer backfills seawall.

Self-Load Time: 1.15 min in 150 ft  
Tire Pressure: 13 lb  
Pay Load Weight: 13,900 lb

**Job No. 2**

Material: Soft, loose, medium blow sand  
Self-Load Time: 1.0 min in 125 ft  
Tire Pressure: 14 lb  
Pay Load Weight: 14,700 lb

**Job No. 3**

Material: Blow sand  
Self-Load Time: 1.9 min in 125 ft  
Tire Pressure: 17 lb  
Pay Load Weight: 15,200 lb

The size of the loads obtained depends to a great extent upon the correct tire pressure and the operator's knowing just how to obtain a load in sand. In all these tests, the rigs were self-loading.

Tests and job performance observations have shown that greater loads can be obtained by doing the following:

Reduce drive-tire air pressures to 20 lb. Start operating; then adjust pressures for better loading. Generally speaking 10- to 20-lb pressures are best in dry sand, while 15 to 20 lb are best for damp, moist sand.

To get the best load into the scraper after tire pressures have been adjusted, the following procedures are recommended:

(1) Go into the loading area in second gear, lower scraper blade slowly into sand, picking up as much of the load as possible from the momentum of the machine. This will fill that hard-to-reach rear area immediately in front of the tailgate.

(2) Shift to first gear, pump rapidly until nearly loaded by raising and lowering scraper blade as deep as possible without stalling or spinning the tires.

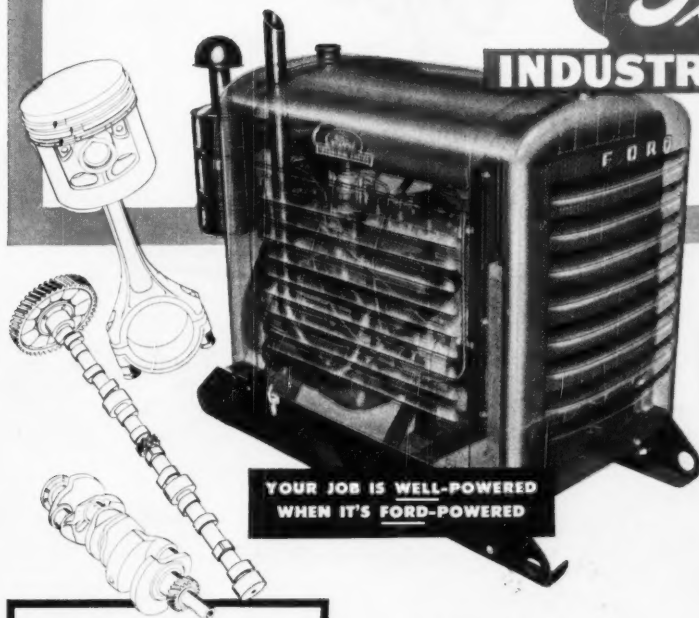
(3) Top out the load by increasing the machine's momentum and follow through with two or three deep pumps.

(4) Get what you can and run. There is little possibility of getting stuck. Even in loose shifting conditions, the big low-pressure tires allow you to roll over soft sand and travel up 8 to 10% slopes with little effort.

Spreading sand is the same as spreading any other material and should present no problems.

# For the **RIGHT** Features\* specify

**Ford**  
**INDUSTRIAL ENGINE**



## **Ford "254" POWER UNIT**

6 cylinder, 254 cu. in. displacement  
(also available as engine assembly alone)

When it comes to industrial engines and power units, one of the most important factors in building and keeping satisfied customers for your equipment is to use—

\*Don't forget, too, the *right* power... five great engines in the Ford Industrial Engine line; the *right* service... as near as your nearest Ford Dealer... as well as the *right* features—all 3 big reasons why equipment builders know Ford Industrial Engines can add important user acceptance to their applications.

Ford Industrial Engines are offered as complete power units, either open or closed, or as individual engine assemblies, both with a wide variety of special attachments. They are made in the following types and sizes:

120 cu. in. 4 cyl. • 239 cu. in. V-8  
226 cu. in. 6 cyl. • 254 cu. in. 6 cyl.  
337 cu. in. V-8

## **MODERN POWER . . . with the RIGHT FEATURES**

● For example—autothermic pistons with chrome top compression ring . . . high lift camshaft . . . counterbalanced crankshaft . . . heavy duty, precision type, replaceable, steel backed, copper lead main and connecting rod bearings . . . hard face cobalt exhaust valves . . . valve rotators . . . moly-chrome alloy valve seat inserts. That's Ford Power . . . the industrial engine-power unit line that is made throughout to Ford's famed high standards of progressive engineering and quality design.

Bring your power problem to your Ford Dealer, to the Ford District Sales Office nearest you or the Ford Industrial Engine Department at Dearborn, Michigan. There's a Ford Industrial Engine that's *right* for your job.

**For full details, MAIL THIS . . .**

**Industrial Engine Department**  
**FORD MOTOR COMPANY**  
Dearborn, Michigan

**INDUSTRIAL ENGINE DEPT., FORD MOTOR COMPANY, DEARBORN, MICHIGAN**

Send me complete details on your Industrial Engines and Power Units.

Name

Street

City  State

# The Line Forms to the Right...

## Why The Operators BIG RED



**T**ALK to operators who have handled both the BIG RED combination and other dirt moving units. Ask these operators which they prefer and they'll point to the BIG RED hook-up of an International TD-24 tractor and Bucyrus-Erie B-170 or B-250 scraper.

They'll tell you *why*, too. This outstanding

dirt moving team is bigger and easier to operate, does things no other combination can do. It comes up with a good day's work every time out, even in wet slippery weather. It averages more dirt per trip than any other crawler tractor-scraper outfit, makes one or two extra trips per hour. No other tractor is bigger, more

### See Your INTERNATIONAL

# *Prefer Team*

*Matched for  
Championship  
Dirt Moving*



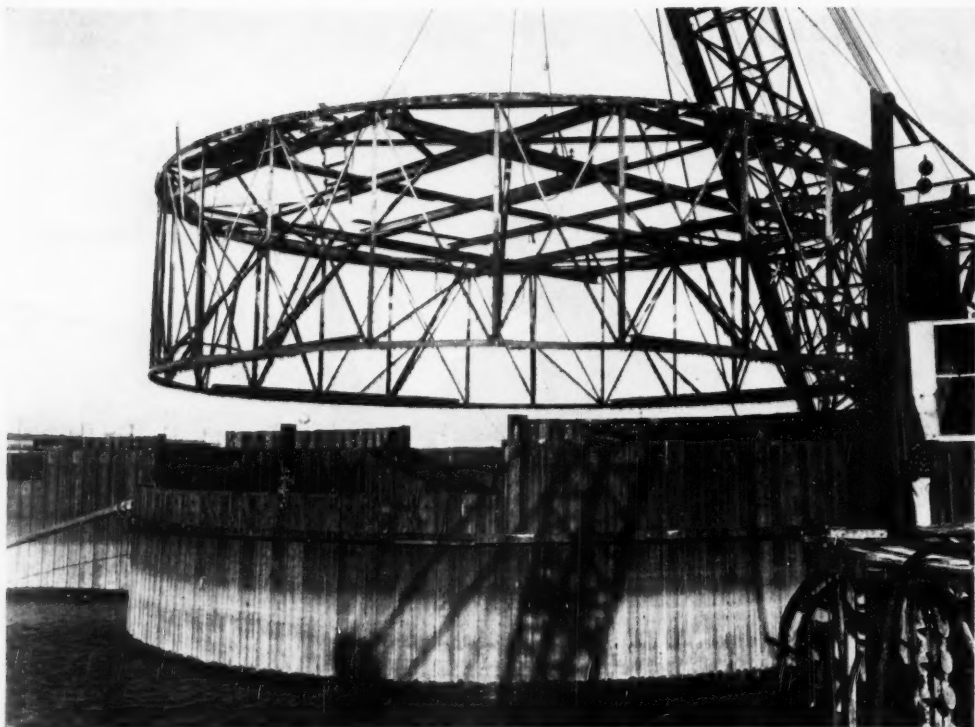
powerful, more flexible, or easier to handle. The scraper is perfectly matched to take full advantage of this great power. It handles easier, loads quicker, dumps faster and cleaner than other scrapers.

Your operators will "go for" the championship BIG RED team, too. Even more important, they'll use it to cut your dirt moving costs. Ask for complete information!

1897800

**BUCYRUS-ERIE COMPANY, South Milwaukee, Wis.**

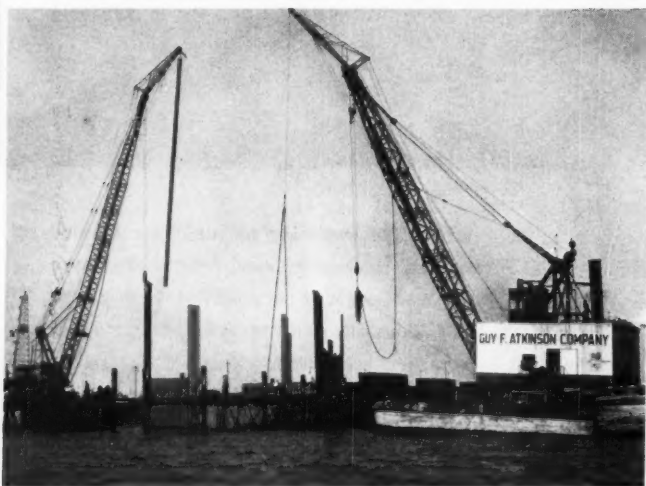
**Industrial Tractor Distributor**



LIGHTWEIGHT STEEL TEMPLET is withdrawn from inside of circular sheetpile cell driven for Long Beach (Calif.) quay wall. It

will be moved ahead and set in place to guide piles for another of 44 62-ft cells that make up 2,780-ft harbor wall.

## Templet Holds Piles for Accurate Driving



BARGE-MOUNTED CRANES work sheetpiling down. Bucyrus-Erie crawler at left is preparing to thread next pile on to line of sheeting, while steam whirler at right jets others down. Frame for holding templet has already been set for next cell.

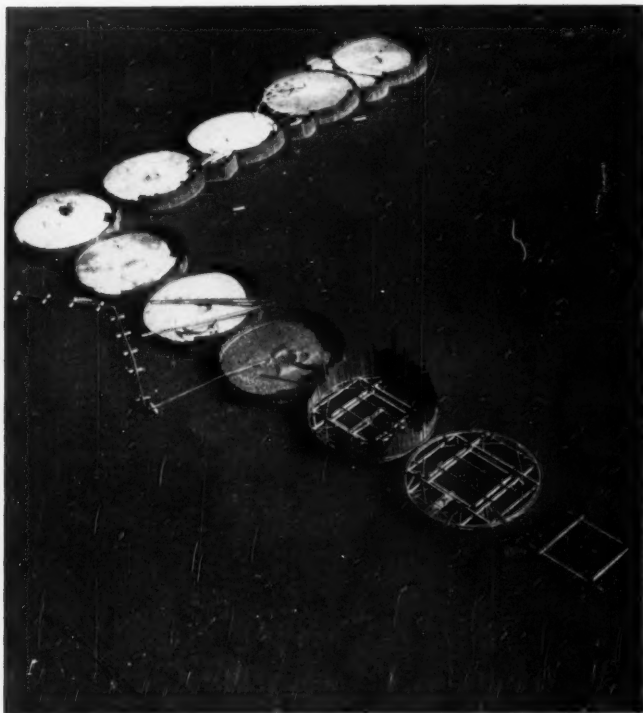
LONG BEACH HARBOR'S new cellular quay wall is a key feature of that California port's \$100,000,-000 development program. And key to the quay wall's rapid construction was a circular templet that accurately held steel sheetpiles in cells for fast driving.

The quay wall, in 35 ft of water, will retain a hydraulic fill to make 136 acres of new land. It is 2,780 ft long, formed by 44 sand-filled 62-ft circular cells. More than 560,000 lin ft (107 mi) of Bethlehem shallow-arch steel sheetpiling went into the job, which Guy F. Atkinson Co., Long Beach, completed in 7 months.

Quay wall cells were formed around a circular templet of light structural steel. It was supported by a framework of four H-piles driven into the harbor floor. A single exterior circumferential wale guided the sheetpiles and held them tight against the interior templet to insure concentricity and



CIRCUMFERENTIAL WALE rests on brackets from templet, holds sheetpiles in place.

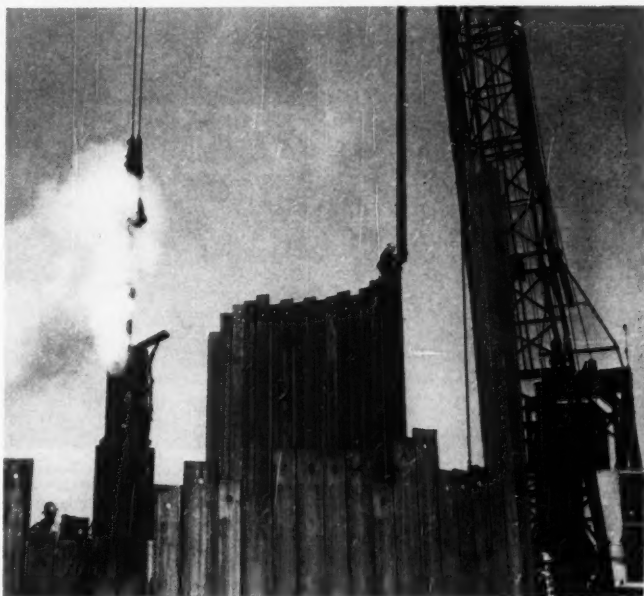


STAGES IN CELL CONSTRUCTION show in air view: Templet-supporting frame set; templet placed on frame; sheeting set and driven; cell filled with dredged sand.

minimize the cell's "working" under sea action during driving. The wale, a curved I-beam with web horizontal, was in four segments with a sliding joint held together by a girdling cable threaded through staples in the web. The wale rested on brackets projecting radially from the templet. During cell construction, when sheeting reached a bracket, the wale was chained to the top of a driven sheet, and the bracket removed so driving could proceed.

Atkinson set the job up for production-line piledriving—with two templates and three sets of supporting frames. Upon completion of a cell, its interior templet was lifted by crane, leapfrogged over the next cell under construction, and lowered in place on the third H-pile frame, which had already been set. Then the encircling cable holding the wale of the completed cell was slacked to free the ring so it could be easily removed and placed on the relocated templet. Completed cells were immediately filled with sand hydraulically dredged from the harbor floor.

(Continued on page 82)



STEAM PILE HAMMER drives two sheets at once. It is held on sheetpiling by four long fingers that extend down from hammer on each side of piles. Hammer is quickly oriented on sheeting through tagline to timber wedged through lifting staple at top.

# NO PUSH... NO PULL... with



## *Cuts* **HARD WORK,** **HIGH COSTS** *because:*

Kwik-Mix fully-powered Moto-Bug travels 1½ to 4 m.p.h. both forward **AND REVERSE**. Power does **ALL** the hard work.

Positive steering, plus riding step (optional), lets operator ride while traveling, spotting and backing up.

Carries 10 cu. ft. load in big hopper or 1200 lbs. on 4-ft. flat-bed, with one-man economy of operation.

Standard-make 4 h.p., 4-cycle gas engine easily takes full load up 20% grades or ramps.

Results: bigger loads, less operator fatigue, more trips . . . 3 to 4 times more production per man-hour with Moto-Bug.



Handy 33" width easily clears narrow doorways and crowded aisles. Moto-Bug turns in own length. Maneuvering is easy with positive steer.



Low 38" hopper height permits direct discharge from mixer (6-S Dandie illustrated). Power carries load from mixer to forms, keeps output high.



Sturdy 4-ft. flat-bed platform carries 1200-lb. loads . . . has stake pockets for sideboards. Quickly interchangeable with 10 cu. ft. hopper.



Gravity dumps hopper instantly . . . or operator can control rate of discharge by handy rope control. Scoop-shaped hopper is free-flowing.



Send for Moto-Bug literature to Kwik-Mix Co., Dept. K-100, New York, N.Y.

Name _____	Title _____
Company _____	Dept. _____
Street _____	
City _____	State _____



# Moto Bug



Quick spot, quick dump speed pouring on building and bridge floors. Dual drive wheels are optional equipment . . . dual steer wheels, standard.



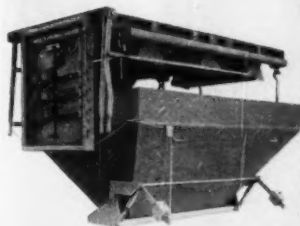
Moto-Bug easily takes full load up 20% ramps. Operator rides on back step . . . takes it easy . . . moves bigger loads, makes more trips per hour.

**- MIX COMPANY**

14000 PORT WASHINGTON, WIS.

## ACCURATE . . . "HI-SPEED" ROADBUILDERS' Batcher

Johnson Roadbuilders' Batchers are completely portable . . . adaptable to fit similar bins . . . provide accurate control . . . produce top-quality concrete with utmost economy of materials. Handle 2, 3 or 4 aggregates in sizes for 34-E paver batch or 2, 3 or 4 yd. batch for charging transit mix trucks. Other Johnson sizes, types to fit production problems of any plant.



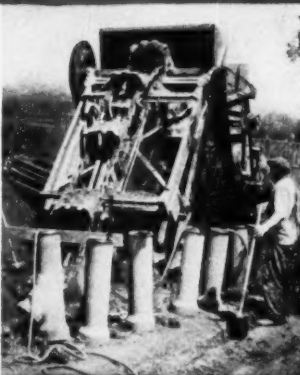
## C. S. JOHNSON COMPANY

Keokuk, Iowa

Champaign, Ill.

## 310 TRENCHLINER\* digs 15' deep, up to 54" wide

For your heaviest sewer, gas and water-main excavation, check this heavy-duty Parsons 310 Trenchliner. Digs to 15' deep . . . 54" wide . . . has 45 digging speeds from 8" to 186" per minute. Boom is telescopic, easily adjusted for digging depths . . . shifts to cut within 15" of either side of machine. Power shifts the arc-type spoil conveyor. 4 smaller Trenchliners also available.



## PARSONS

COMPANY  
Newton, Iowa

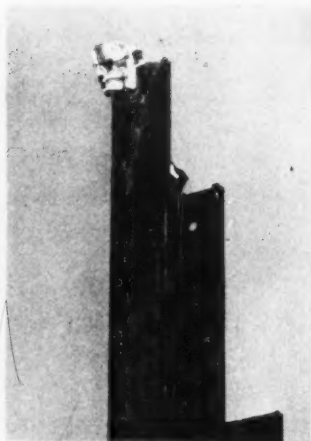
## HALF-YARD 205 has self-adjusted clutches

With Koehring 1/2-yard 205, there's no time-out for daily manual clutch adjustments . . . no "compromise" settings. You get top operating efficiency from start to end of shift because heat-compensator springs on the 205's six main clutches make all tension changes automatically. That's only one of many ways this heavy-duty 205 gives you more work-time . . . bigger daily output. It will pay you to get all the facts on the 205.

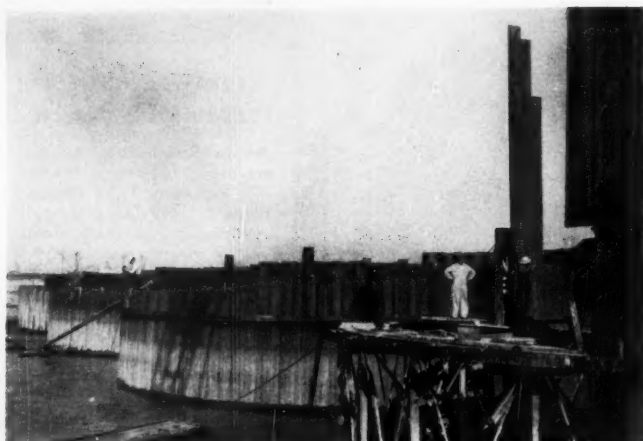


## KOEHRING

COMPANY  
Milwaukee 10, Wis.



**PILE THREADING** is made easy by funnel that directs sheet being set so that interlocks join without fumbling. Pair of stirrups lets pile "stabber" stand safely and comfortably at top of piles.



**NEXT PILE** (far right) drops down interlock to driving position as man stands by with wood paddle to guide it between wale and templet. Pipeline (left) is from sand sucker that fills cells.

(Continued from page 79)

Two barge-mounted cranes jetted and drove the sheetpiles. Procedure was to set an arc of sheeting between templet and wale, then work the piles down to grade

two at a time. A split funnel-shaped device that facilitated threading of interlocks as the piles were set up was a big factor in fast cell construction. The funnel was fastened to the top of the pre-

viously set sheet to guide the next interlock into place. A man at the top of the row of piles, standing comfortably in a pair of steel stirrups, guided the sheet into the funnel.

## Portable Screening Plant Follows the Pit



**REGULAR PROCEDURE** was reversed on O'Sullivan Dam, Moses Lake, Wash., with installation of a portable grizzly. Instead of the usual practice of transporting raw materials to the plant, the entire rig is towed on skids by a Cater-

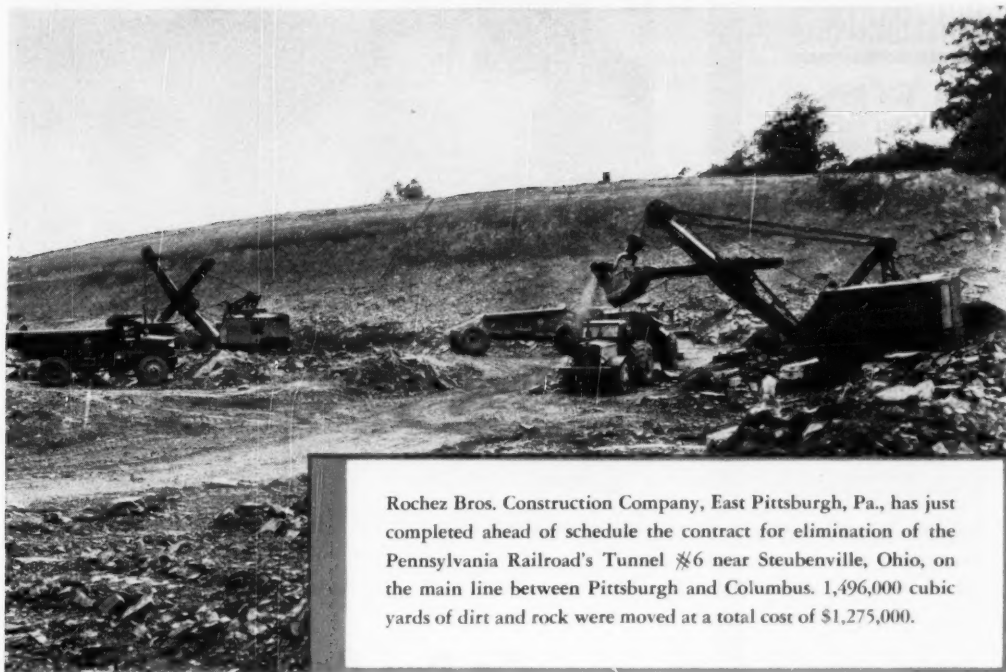
pillar D-8 tractor, following close to the edge of the cut. Normal relocation requires only ten minutes. A Model 605 Koehring dragline (2½-yd) works from the top of the bank, feeding into the grizzly for production of base course ma-



terial through a 42-in.x10-ft Cedar Rapids horizontal screen. Accompanying pictures are by Glenn Voegelien, project manager for Lytle, Amis & Green combine, contractors on the \$9,000,000 U. S. Bureau of Reclamation project.

## **GULF PRODUCTS** *and* **FINE SERVICE**

*keep equipment rolling  
on tunnel elimination project*



Rochez Bros. Construction Company, East Pittsburgh, Pa., has just completed ahead of schedule the contract for elimination of the Pennsylvania Railroad's Tunnel #6 near Steubenville, Ohio, on the main line between Pittsburgh and Columbus. 1,496,000 cubic yards of dirt and rock were moved at a total cost of \$1,275,000.

Another big construction project where equipment made an outstanding record of dependable performance with the help of Gulf quality products and services.

Here are a few of the reasons why so many leading contractors prefer the products identified by the familiar orange disc: Gulf lubricants provide extra protection. Gulf fuels insure full power. Gulf supplies expert engineering counsel and prompt delivery service. Result: fewer delays, lower maintenance costs, bigger profits!

Let us discuss with you how our products and services can help you on your next job. They are

available to you through more than 1200 warehouses. Write, wire, or phone today.

### **Gulf Oil Corporation • Gulf Refining Company**

GULF BUILDING, PITTSBURGH, PA.

Sales Offices - Warehouses

Located in principal cities and towns throughout  
Gulf's marketing territory



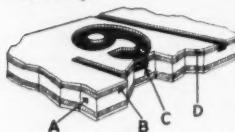
# ROE

## STEEL TAPES

are best for  
**CONTRACTORS...**

the facts prove it!

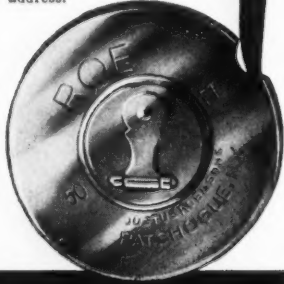
FIRST AND FOREMOST, Roe Steel Tapes are extremely easy to read... and they go right on being clearly legible year after year. The black markings are permanently etched into the steel which is then nickelplated to provide a lustrous contrasting background. A transparent plastic overcoating is added for topmost wear resistance—and durability.



- A — Steel tape
- B — White nickel
- C — Black etched markings
- D — Plastic overcoat

Pictured here is the Roe Steel Tape #302 with polished chromeplated, sturdy welded steel case. Other Roe models feature cases in handsewn leather, and in metal-banded leather and leatherette. They have a reinforced rust resistant liner, precision winding drum, flush-folding handle, press button center and roller mouthpiece. All are available with 25, 50, 75 or 100-foot tapes; feet in inches and eighths, or in tenths and hundredths.

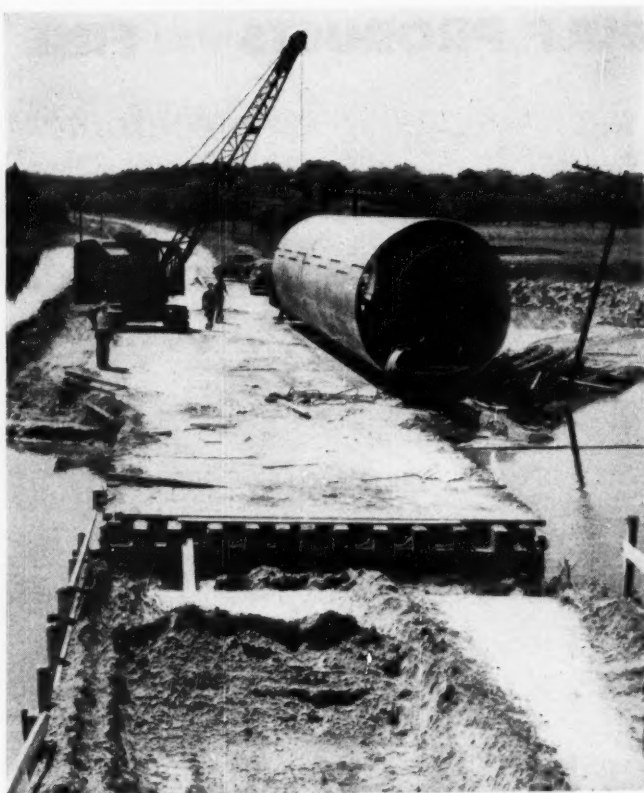
Get Roe Steel Tapes from your hardware dealer—or write us giving his name and address.



### JUSTUS ROE & SONS

Makers of fine steel tapes since 1876

PATCOQUE NEW YORK



HUGE PIPE CULVERT IS ASSEMBLED by Dayle Pope Co. alongside Florida highway as replacement for outmoded timber span. One bent of bridge (foreground) has been removed to receive 13x86-ft. Armco Multi-Plate pipe, which will be rolled into it.

## Six-Day Culvert Job Replaces Timber Bridge

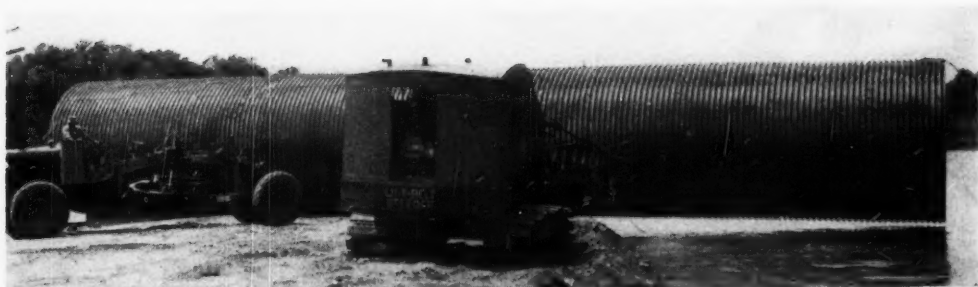
FLORIDA GOT A NEW BRIDGE in a hurry when it replaced an outmoded timber span with a 13x86-ft steel plate culvert. In 6 days an 11-man crew assembled the 22-ton pipe on dry land and launched it into place as a unit.

The old timber structure carried U.S. 90 over Lake Jackson near Tallahassee. A \$13,000 contract was let for a new 20-ft concrete slab bridge to replace it, but this was cancelled when further study indicated a \$5,000 saving by switching to a corrugated metal drainage structure. Then a new contract was awarded Dayle Pope Co., Quincy, Fla., for assembling and placing the pipe, which the

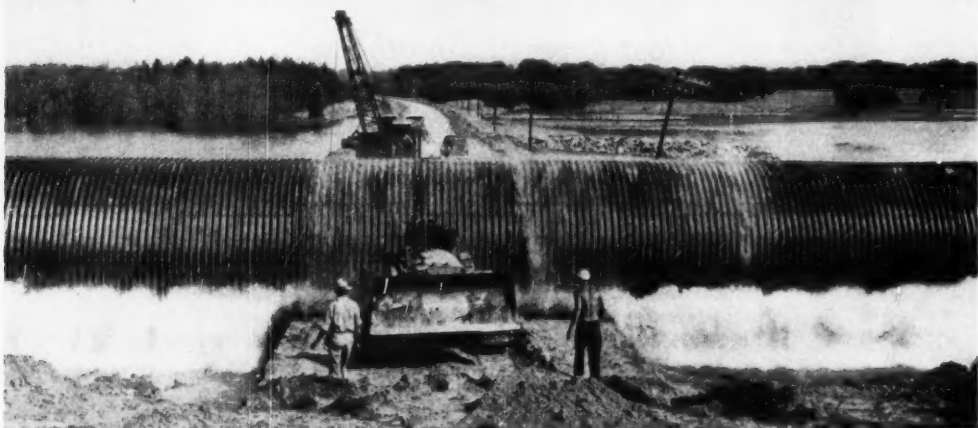
state road department purchased.

The culvert is 5-gage Armco Multi-Plate pipe 13 ft in dia, 86 ft long, with a total weight of 22 tons. It was erected on the shoulder parallel to the center line of the road leading to the bridge. A 3/4-yd Quick-Way crane lifted the plates into position, and workmen bolted them up with air wrenches. No scaffolding was needed, because the pipe was rotated from side to side so that the men could work from the ground at all times. When the pipe was completely assembled and ready to be placed, it was coated with Bitumastic No 50 for extra protection.

During most of the pipe erection,



ASSEMBLED TUBE IS ROLLED TO BRIDGE SITE by Austin-Western patrol grader and Link-Belt Speeder crane after it has been swung broadside to highway. While it is rolling along old bridge, long pipe cantilevers 32 ft over each side.



22 TONS OF STEEL SPLASH INTO WATER as culvert is launched into prepared gap in old bridge. Pipe settled into opening, was pushed down past adjacent pile caps, but hung itself up on some forgotten bracing. After this had been cut out, culvert landed on underwater earthfill placed to hold it to correct grade. This is on Saturday, sixth day after erection of pipe was started.

traffic continued to use the bridge. However, as that work neared completion, one bent of the old wooden bridge was torn out and dirt fill placed in the channel to reduce the water depth from 16 ft to 13.

With all in readiness, a Link-Belt Speeder No 85 crane swung one end of the pipe around while an Austin-Western No 99 patrol grader held the other end to keep it from moving. In this way the pipe was shifted to a lateral position across the roadway. A telephone pole on one side of the road and high tension lines on the other side made it necessary to jockey the pipe around considerably before it could finally be moved into the correct position on the bridge.

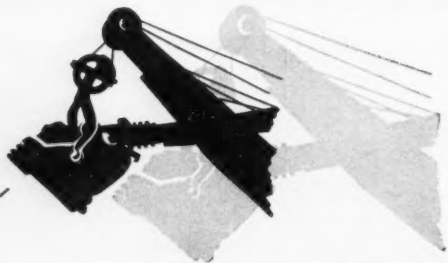
The grader then rolled the pipe gently across the bridge until it dropped into position in the opening prepared for it. The pipe settled evenly until it lodged against the pile caps on each side of the open-

ing. However, with a little nudging, it slid past the caps and continued its even settlement until one end rested on some timber bracing which had not previously been noticed under the water. When this bracing was removed, the pipe came to rest on the bottom of the channel within 2 in. of the desired grade and only 7 in. off center. Fill and paving completed the new crossing.

Assembly and installation of the Multi-Plate pipe took 6 days: Work began Monday morning; launching took place Saturday afternoon. And during this time, work was suspended for half a day until power in the high tension lines overhead could be cut off. A superintendent, three machine operators, and eight laborers handled the pipe job for the Dayle Pope Co. They were assisted by R. Matson, construction representative from Armco Drainage & Metal Products, Inc.

## Movie Describes Safe Blasting Techniques

"BEFORE THE BLAST" is another in a series of specialized safety films available without charge, produced to aid in the reduction of accidents and injuries in the construction industry. The film outlines numerous safety rules and suggestions concerning storage, transportation, and use of commercial high explosives. The film stresses the fact that the time to familiarize yourself with blasting safety rules and equipment is before blasting operations begin. "Before the Blast" will assist in this objective. Running time of this 16-mm color-sound movie is 10 min. Booking information may be obtained from: Affiliated Aetna Life Companies, Public Education Dept., Hartford 15, Conn.



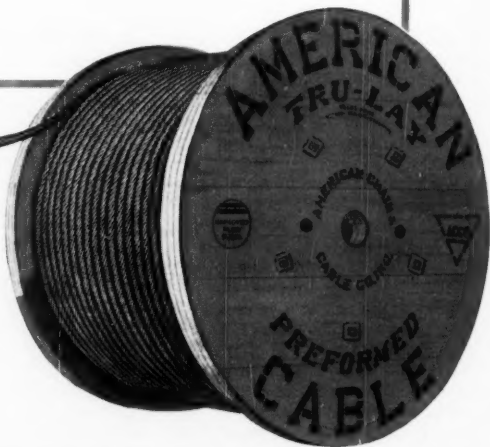
*Just as some shovels  
last longer than others...*

**TRU-LAY...**

*will give you more of everything  
you want from **wire rope***

● TRU-LAY WIRE ROPE is preformed and made by the men who originated preforming. In its toughness and strength are properly combined to give better and longer service regardless of job conditions. Users like its easier handling qualities and the fact that it is available in all constructions, lays, centers and grades.

Specify TRU-LAY—the wire rope that's engineered to cut costs and improve production—and get the most of everything you want from wire rope.



**ACCO**

*In Business for Your Safety*



**AMERICAN CHAIN & CABLE  
AMERICAN CABLE DIVISION**

Wilkes-Barre, Pa., Atlanta, Chicago, Denver, Houston, Los Angeles, New York,  
Philadelphia, Pittsburgh, Portland, San Francisco, Seattle, Tacoma, Bridgeport, Conn.

# SHORT CUT in ROCK @ 1,000,000 YDS. PER MILE

## HARRISON CONSTRUCTION CO. SLICES PITTSBURGH HILLSIDE WITH 9 LORAINS!

Talk about tough ones! 1,250,000 cu. yds. of excavation . . . mostly rock . . . side hill cuts up to 240 ft. deep . . . slicing off the sides of a mile long mountain. It's a new \$3,000,000 four lane super-highway on route 247 in Pittsburgh's southside — known as the West End By-Pass to South Hills.

Harrison Construction Co., long-time Lorain users, moved in a fleet of 9 Lorains — a part of the 36 Lorains they have purchased over the years — for double shift operation.

Scampering over the hillsides like a mountain goat, this 3/4 yd. Lorain shovel acts as a pilot shovel to build access roads to the tops of the cuts so that bigger Lorains can get onto the job and turn out the major production.

Tough jobs . . . the roughest rock . . . big fleets . . . successful contractors . . . go hand in hand with Lorains. Owners like Harrison Construction Co. have proved by experience over many years on many jobs that Lorains pay off in profitable performance . . . that's the reason Harrison made this big, tough job an all Lorain job!

It will pay you to learn why the big names pick Lorains . . . from your helpful, handy Thew-Lorain Distributor!

THE THEW SHOVEL CO.  
LORAIN, OHIO

# THEW LORAIN®

SHOVELS • CRANES • CLAMSHELLS • DRAGLINES  
HOES • MOTO-CRANES

Two big Lorain shovels, working on different benches, gouge out the rugged hillside. Most material was heavy rock, and the Lorains made easy work of clay, sandstone, limestone, slate and shale, too!



## CONSTRUCTION LABOR NOTES . . . By JIM CONNOLLY

### Beware the Phony "Labor" Magazines

CONTRACTORS ARE NO MORE IMMUNE than other business men when it comes to being cheated out of some of the millions of advertising dollars by the phony "labor" press that lives off the tense relations between employers and union men.

With promises of keeping Communists in line, preventing strikes or labor troubles, these oily-tongued dynamiters have made a recent strong come-back and have built their business up to an estimated \$100,000,000 a year from labor-timid companies.

As explained by Frank Brock and Henry Lee in the lead article of May 12 "Printers' Ink", legitimate labor publications, police departments and Better Business Bureaus have joined forces against them, but it's a large scale spread-out operation.

In our own industry, concentrated efforts to solicit from contractors in and around St. Louis prompted the following letter to its BBB from the local Carpenters' District Council, AFL:

"This is being written for the purpose of advising that this organization has absolutely no interest in any labor paper, and so far as we are able to determine, we cannot see where any contractor would benefit from the purchase of space for an ad. *The relationship with our employers is based upon mutual trust and confidence and it is not necessary for them to purchase advertising space in any labor paper in order to maintain that relationship.*"

The article goes on to list many papers which are operating under official-sounding titles and hastens to explain that it is by no means an indictment of the legitimate labor press. They advise: (1) Don't pay in advance; (2) don't buy "Compliments-of-a-Friend" ads; (3) demand a circulation statement; (4) be sure they're officially endorsed by a major labor body, and (5) if you're suspicious, check with the BBB or the Chamber of Commerce.

### Damage Suit Awarded Kentucky Contractor

The Dahlem Construction Co., of Louisville, charged that Local 181, Union of Operating Engineers picketed and tied up five jobs last year during a strike against Louisville contractors. Dahlem claimed the strike cost him \$2,300 and pressed the damage claim under the Taft-Hartley Act in federal court. Union attorneys contended that the union had given proper notice of the end of the contract and that the strike was held only after all lawful provisions had been followed.

The company first sought a court order forbidding

the picketing, but federal Judge Roy M. Shelbourne denied this. On the damage claim, however, he awarded Dahlem \$1,850, saying that the union had struck in violation of its work contract.

### Construction Labor Man Chosen for ILO

John J. Brennan secretary-treasurer of the New York Building and Construction Trades Council is one of the three AFL labor advisors appointed by President Truman to the 33rd meeting of the International Labor Organization in Geneva, Switzerland, June 7 to July 1.

He is the third construction labor man to be appointed to the meetings in recent years, preceded by George Meany and Howard MacSpedon, now president of the same trade council.

### Conflicting Policies on Union Shop Elections

In a special policy statement early in June the five-man NLRB unanimously held that it could not lend itself to any policy that might nullify or change the Taft-Hartley Act. The section in question is the one which requires employees to vote for a union shop before a union may ask for it. Last December Mr. Denham, the general counsel, concluded that because of the difficulty in employment relations in the building and construction industry, he would not seek to enforce the union shop provisions. The practicality of the requirement was tested with a pilot election among heavy construction employees in western Pennsylvania, and another scheduled for Detroit building trades was never completed.

The Board's attitude is that if some of the union shop provisions cannot be made to work, the fact should be reported to Congress rather than to change the law themselves by administrative exemption of a single industry. In the meantime they would obey the letter of the law. Mr. Denham's assertion is that his policy will continue, since the expense and energy of conducting the elections is impractical. He did hint, however, that he would order elections on large dam and bridge projects where employees will have jobs for two years or more and a semi-stabilized condition of employment prevailed. Since the general counsel is the exclusive authority over issuance of complaints of unfair practices, the Board can do nothing if Mr. Denham refuses to issue these complaints. The labor board is the court of appeal on his refusal to issue orders for elections, however, and apparently they will take up appeals from the general counsel on a case-by-case basis.

(Continued on page 90)

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If you're using hand methods in concrete work, you're behind the times. Modern, efficient, proven Whiteman equipment will speed up the job, greatly reduce labor costs and increase your profits. One Whiteman Power Buggy will do the work of six men. A Whiteman Floating and Finishing Machine does the work of five men... and does it better. You just can't afford to be without this highly productive equipment in today's competitive market. Write today for prices, descriptive literature and name of your nearest distributor.



**SKILL TROWEL**—Whiteman Trowel leaves a "flat" surface for flat, smooth, dry taping unnecessary.



**SCREED STAKE CAP**—Make up down screed stakes on job. Instantly adjustable. Never necessary to disturb stake.

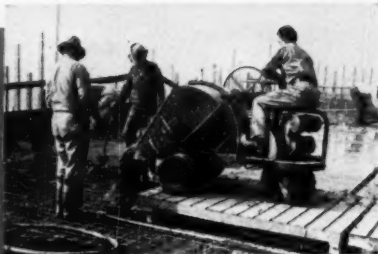


**SCREED STAKE**—All metal stake easily inserted in any type soil condition. Head slides up or down.

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**MANUFACTURING COMPANY**

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### PLACING

A Whiteman Power Buggy will carry as much concrete as six men with wheelbarrows and speed it up to 16 mph over soft earth, up 25% grades, to upper floors, over light scaffolds, through doorways. New dumping mechanism gives positive control of the dump. Powered by 7.5 h.p. 4-cycle air-cooled engine. Versatile, tough, dependable. Proved itself with large and small contractors for many years.



### SCREEDING

Whiteman Rodding Machine eliminates labor of hand screeding and greatly speeds operation. Rods the slab to a perfect level, puddles and vibrates the entire depth and area of concrete. Thoroughly compacts slab and brings moisture to surface for finishing operation. Rods up to 15-foot widths. 1½ h.p. gasoline engine.



### FLOATING

With float trowels attached, New Model B Whiteman Floating and Finishing Machine compacts the slab, drives out air pockets, brings up moisture and produces an excellent traction surface. Float trowels are easily snapped on or off in a few seconds... an exclusive patented Whiteman feature that is a great time saver.

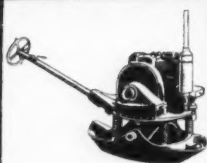


### FINISHING

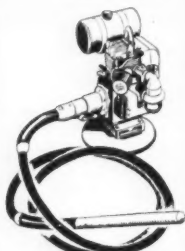
For finishing, the float trowels of the Whiteman Floating and Finishing Machine are quickly snapped off and the tool steel finish trowels are used. Pitch of trowels can be adjusted by control knob on handle while in operation... another exclusive Whiteman feature that saves a tremendous amount of time. New design base and improved heavy trowel arms assure perfect alignment of trowels.



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## Labor Notes... continued

### New York City Continues Stabilization and Labor Peace

UNIONS representing 24 construction trades signed a new three-year agreement with the Building Trades Employers' Association of New York City on June 30, 1950, extending their prior three-year pact.

Journeyman's rates jumped 25c/hr on the average with laborers receiving 20c. Also each trade was offered any two of the following three benefits: (1) Six paid holidays, (2) 3% welfare fund, (3) 3% pension fund. Number of hours worked per day stays the same, and the parties agree to a no-strike, no-lockout contract. As in the past the rates are tied to the cost-of-living index. Any rise above 10% from June 1950 level will call for a wage increase in multiples of 5c. Thus if the C-O-L index jumps 15%, tradesmen will receive a 5% increase (15c on a \$3.00/hr rate).

Plumbers signed a separate five-year contract; electricians and bricklayers having agreed previously. The only holdout at present is the steamfitting trade on the question of hiring in pairs, assigning a shop steward for six or more pairs, and use of pipe-threading machines on radiator branches.

### NLRB Jurisdiction... Pro and Con

THE PICTURE IS still blurred and not becoming any clearer as to just where the construction industry stands under Taft-Hartley. Not only have there been dissensions within the NLRB, but there is no standard as to which cases will be taken under jurisdiction and which will not, leaving both management and labor pretty well up in the air. In mid-June the Board handed down a list of significant decisions which clarify the situation slightly. They will exercise jurisdiction in the following cases: (1) Contractors engaged in construction, maintenance and repair of U. S. highways (Strong Co., Springvale,

Utah), but not some local highway constructors' suppliers (Brewer and Brewer's Sons Inc., Chillicothe, Ohio); (2) disputes on large dam projects which have impact on interstate commerce; (3) large manufacturers of pre-fab houses (Lassen & Hodgson, Kansas City, Mo.); (4) contractors' associations or labor unions which are party to a labor contract (Citation: General Contracting Employers' Assn., Buffalo, N.Y.); (5) disputes on atomic construction.

Jurisdiction will not be exercised for:

(1) Individual contractor, not a member of an employers' association, whose activities are essentially local (Straubinger Construction Co., Buffalo, N.Y.); (2) projects of local character including residential construction and drive-in theatres (Denver Building & Construction Trades' Council and Petredis & Fryer, Pittsburgh); (3) union jurisdictional disputes, even though they're considered special target of the T-H law (West Virginia Electric Corp., Fairmont); (4) local supply dealers (Texas Construction Material Co. and Makins Sand & Gravel Co.)

Rulings can be expected to change with Board experience, and personnel changes, opinions of the courts, and maybe even modifications in the law itself.



## Special Truck Carries Torches and Fuel

MAINTAINING AND SERVICING the large number of warning torches or flares required on modern highway work is a nuisance. But Leet Denton, head of Denton Construction Co., Detroit, makes the job as easy as possible with this special Ford truck. Torches are carried in the open body. Bottom of body is a 350-gal kerosene tank. Torches are refueled by gravity through a hose. Simple, isn't it?



EASTGATE APARTMENTS

## DRIVE-IT "300" cuts fastening costs 50% on Big Boston Apartment Job!

Over 9000 drive-pins were used at the Eastgate Apartments to fasten ceiling runner channels to concrete "at a saving of over 50%" writes the contractor.

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Every architect, building engineer and contractor should investigate the DRIVE-IT system of fastening. It is Underwriter Laboratories approved for efficiency and holding power and engineered for super-safe operation.

Clip the coupon below and let us tell you how you, too, can save safely with DRIVE-IT!



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Distributors Coast to Coast  
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6704 S. W. Woods Street Portland 1, Oregon  
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### ONLY DRIVE-IT "300" GIVES YOU ALL THESE FEATURES

- ☒ Controlled power with one power charge
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Republic Rubber has been *the* specialist in industrial rubber goods for nearly half a century. Their contributions have played an important part in building the vast network of highways that link the nation together.

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...Cut Down

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put MACK TRUCKS on  
your job



"Truck Absenteeism," like its human counterpart, disrupts the efficiency of your business . . . adds materially to your costs.

Actual job records prove that with Mack trucks on the job "truck absenteeism" is reduced to an absolute minimum. That's because Mack trucks have built-in durability . . . extra reserves of strength and stamina. Because they're better built, they're better able to stand up to the demands of hard-working, day-in, day-out service.

Work done on the job will always be the one true yardstick of truck value. Figured that way, every Mack truck gives full measure — and more — in round-the-clock dependability; longer, more trouble-free mileage life; sustained earning power; and rock-bottom maintenance costs.

On the job — and on the job records — it proves out every time: "YOU GET MORE WORK OUT OF MACK TRUCKS, BECAUSE MORE WORK GOES INTO MACK TRUCKS."

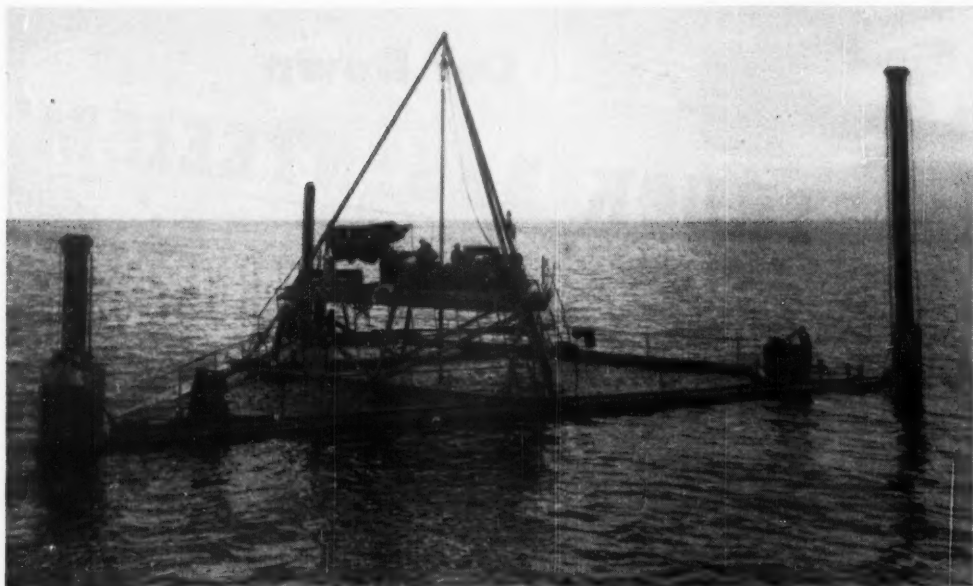
Be Profit-Wise

Modernize with



Mack Trucks, Inc., Empire State Building, New York 1, New York. Factories at Allentown, Pa.; Plainfield, N. J.; New Brunswick, N. J.; Long Island City, N. Y. Factory branches and distributors in all principal cities for service and parts. In Canada: Mack Trucks of Canada, Ltd.

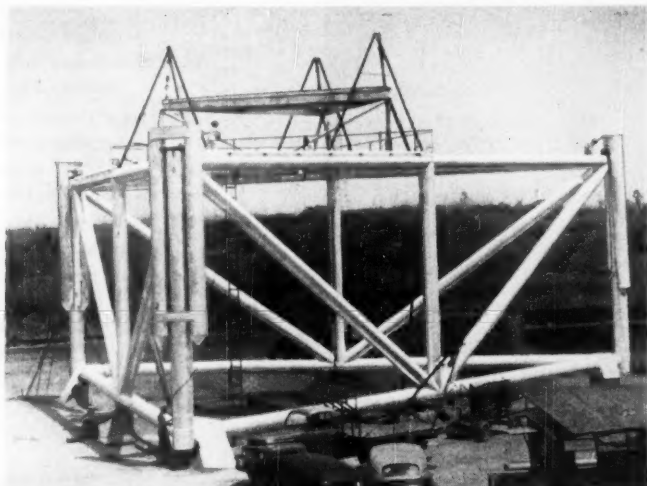
3261



TRIANGULAR FRAME floats in Lake Maracaibo as drilling platform from which borings are made. Spuds and anchors at each corner

hold it in position. Frame of 22-in. pipe extends 30 ft below water, which is nearly 100 ft deep at this spot.

## Floating Platform Supports Rig for Deep-Water Borings



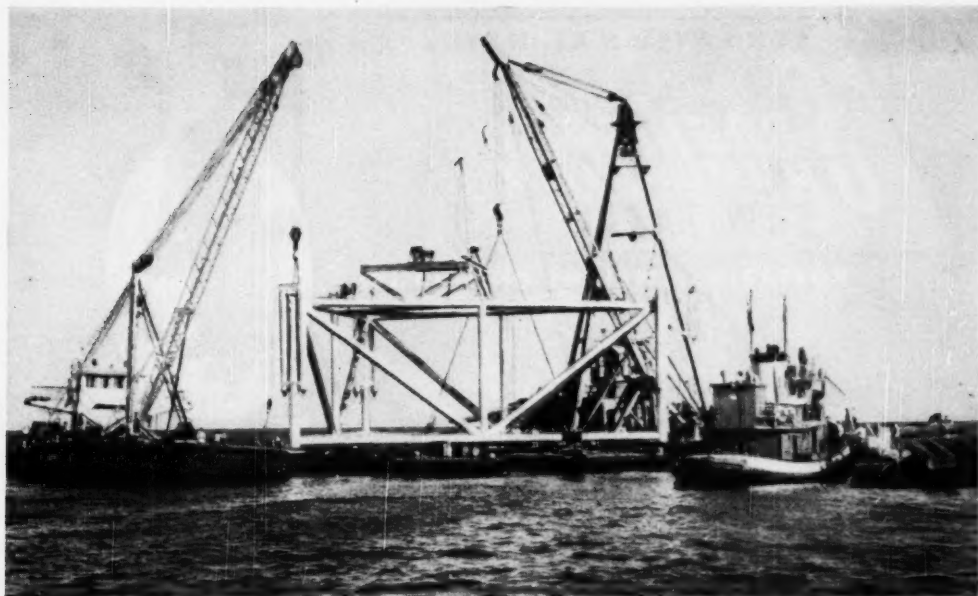
PIPE MEMBERS for float are assembled and welded watertight on shore. Top and bottom triangles are 80 ft on a side. Center corner verticals are left open as wells for spuds.

FLOATING SERENELY in the treacherous waters of Venezuela's Lake Maracaibo, a huge steel pipe frame safely supported a drill rig for deep submarine borings. Spuds and anchors held the floating 60-ton platform steady in 110 ft of water while borings were made as deep as 250 ft below lake surface.

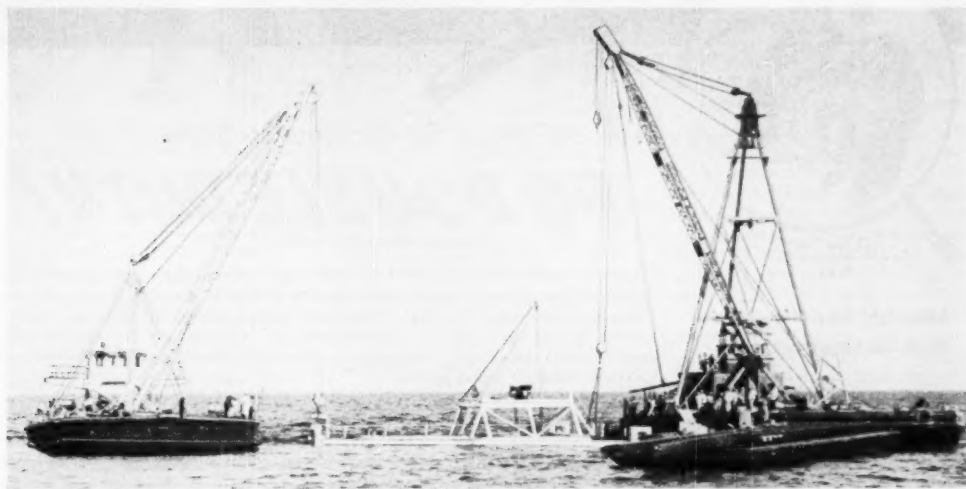
Twenty-five Gow borings were put down to determine sub-soil conditions for pile foundations at the sites of future oil-well derricks. They were 5 to 10 mi offshore in 60

to 110 ft of water. This water depth, coupled with the prevalence of violent storms on Lake Maracaibo, where winds reach 70 mph, made the usual types of temporary drilling platforms impracticable. The new type that was devised floats safely on the lake surface and offers the least possible resistance to wind and waves, thereby minimizing damage.

The floating frame is a triangular prism of 22-in. steel pipe members all welded watertight. It consists of two horizontal pipe triangles, one 30 ft above the other, connected with a trusswork of pipe. Triangles are 80 ft on a side. Corner verticals are large open-end pipes that serve as wells for 22-in. pipe spuds 120 ft long that hold the frame in working position.



COMPLETED FLOAT, weighing 60 tons, has been skidded on to barges and is towed 32 mi to first of 25 drilling sites in deep water 5 to 10 mi offshore. Two big floating derricks prepare to lift frame from its two transportation barges and lower it into lake.



LAUNCHED PLATFORM is almost totally submerged, so can be little damaged by violent lake storms that would wreck ordinary temporary drilling setup. Boring apparatus will sit on upper deck. The 120-ft spuds (on barge at right) are yet to be placed.

Two extra vertical closed pipes on either side of the spud wells give added buoyancy. A small triangle within the upper large one supports an elevated working platform, 10 ft above, that carries the drilling equipment. Weight of the frame is 60 tons.

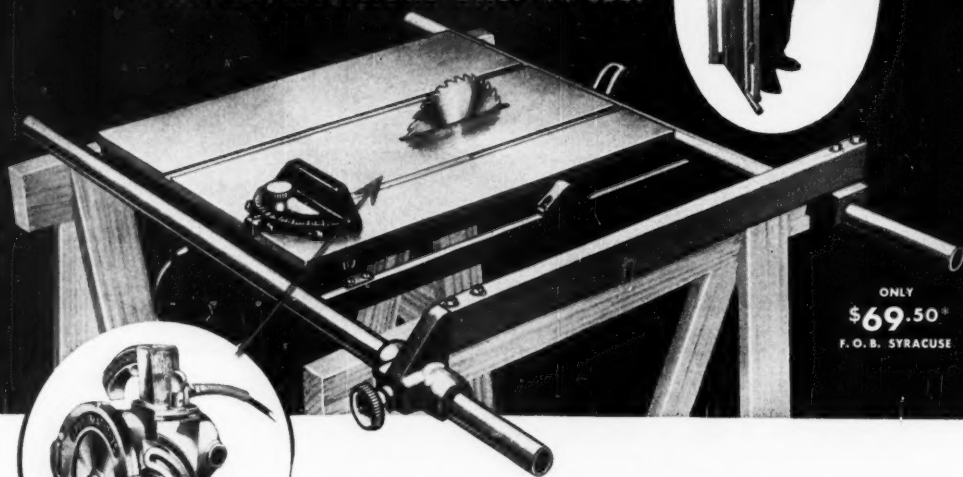
Steel for the float was fabricated in New York and shipped by ocean freighter to Venezuela. After as-

sembly on shore, the structure was skidded on to two barges and towed 32 mi to the site of the first boring. Two floating derricks lifted it off the barges and placed it in the water. Then, spuds and deck equipment were installed. In addition to the three spuds, anchors attached by cables to winches at each corner of the float spotted it and held it on location.

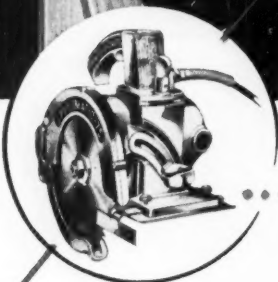
Contractor for the borings was Compania Anonima Constructora Raymond, Raymond Concrete Pile Co.'s Venezuelan firm. Raymond engineers designed and built the floating frame. Gene Philpot was general supervisor of the project, which was for Venezuelan Oil Concessions Ltd., a Shell Oil Co. subsidiary. The job is under direction of Shell engineers.

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Always the pace-setter of electric hand saws — your present Speedmatic Portable now can be converted easily into a table saw — by means of the new Speedmatic Saw Table — simple, highly practical, conveniently set up anywhere. The cost is only a fraction of what you'd pay for a separate table saw. And you have the satisfaction of a quality-proved sawing unit — your reliable Speedmatic. Here's your chance to save and still have the finest tooling to boot.

**Facts about the new Speedmatic Saw Table...**

One man can carry it — weighs only 44 lbs. Made of steel frame and rust-proof aluminum table and slide rails. Mounts anywhere on 2 saw horses — or on set of Speedmatic Table Legs (extra). Working surface (26" x 20") is precision ground for true cuts. Fence adjustment wide enough to handle 4' x 8' plywood sheets. Easily set up to saw multiple pieces for framing, angle cuts, compound mitres. Gauge with adjust-

able index stops assures accurate square and bevel cuts. Can't be beat for cupboards, built-in furniture and trim work. Safe, with easy controls and adjustments. Transparent plastic saw guard, mounted on splitter (extra). And remember: — the Speedmatic you've mounted on this Saw Table cuts practically every material you're likely to use in carpentry operations. See your Porter-Cable distributor today.

*The Balanced Line*

**PORTER-CABLE MACHINE CO., 2508 N. Salina St., Syracuse, N. Y.**

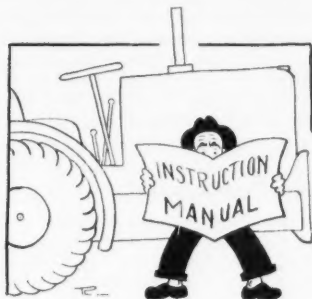
Manufacturers of SPEEDMATIC and GUILD Electric Tools  
In Canada write: Sirmagids, Ltd., St. Catharines, Ont.

## CAMPBELL'S CORNER *A Monthly Equipment Maintenance Feature*

By HOMER C. CAMPBELL, Service Manager, H. W. Moore Equipment Co., Denver, Colo.

### When Should You Drain the Engine Oil?

ONE OF THE TOUGHEST JOBS we in this industry have to handle is the answer to the master question: "When should I drain the crankcase oil?" This is one instance where operator's manuals are seriously confusing. Basically all internal combustion engines are the



same, as are the metals used in their construction. In the construction industry, working conditions about parallel. Yet we have a wide variation in the oil change recommendations. A variation to the point of confusion.

The instruction manual, for instance, says: "Change oil in the engine crankcase after every so many hours of operation; or more frequently under severe operating conditions such as extreme dust, low engine temperatures, intermittent load operation with long standby periods, excessively heavy loads where high oil temperatures are the rule, when diesel fuel with high sulphur content is used."

The owner will want to know: How frequent is frequent? What are severe operating conditions? What is an extreme dust condition? Where is the border line? What if the engine temperature is high in the morning and low in the afternoon? How the hell do I know what the sulphur content of my fuel is? Why is my oil contaminated? All of these things are definitely qualifications. They confuse the original intent of the instructions. The manufacturer says, "This is the time to change your oil un-

less this happens, or if you do this and don't do that, and if you follow ordinary procedure, or if it doesn't interfere with it.

The owner or operator wants to know how come. He is interested in protecting his investment in the equipment. At the same time, he is not interested in raising his maintenance costs by unnecessary oil changes. Oil costs money, parts cost money, downtime costs money. Any wonder he is confused? We can about anticipate his reasoning when he brings up the question of oil change. The manufacturer is trying to show that his equipment will operate longer with fewer oil changes, thus is more economical in operation. The oil companies want more frequent changes to sell more oil. That's the way he figures it.

Nevertheless, he must make up his mind one way or the other. Will he go along with the manufacturer or will he go along with the oil salesman's recommendations? Eventually he will end up with the distributor and ask, "What are the facts?" It won't suffice for us to tell him so many hours or days of operation, because he will want to know why. If he

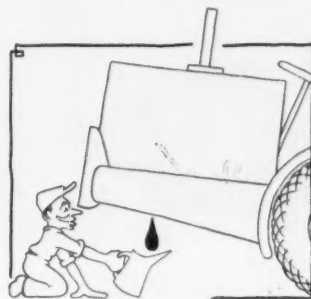


is alert and interested in operating costs he will want a definite reason for spending some of his good money. We can tell him that it is only playing safe to change oftener, and he will want to know, "Playing safer than what?"

Well, modern construction equip-

ment is precision built. It has closer working limits between reciprocating parts. Finer dust and dirt can do more harm in newer, faster units than in slower moving equipment of days gone by.

It is necessary to change oil in the crankcase because it becomes



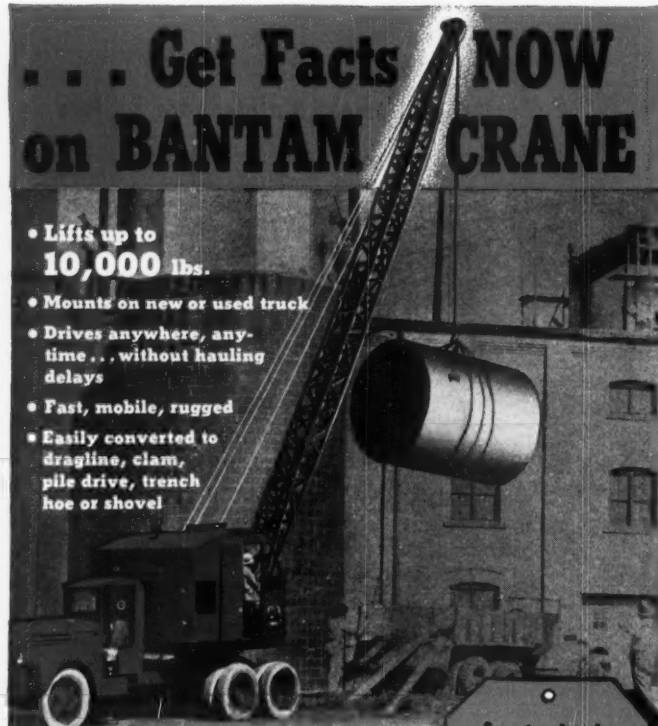
contaminated with the much discussed dust and dirt, with the products of combustion, from fuel and from the products of oil fatigue. These items cause excessive engine wear, which in turn reduces power and increases oil consumption. The mechanical condition of the engine includes such items as rings, cylinder walls, bearings, valves and shafts. It includes the cooling system, the ventilating system, oil and air filters or cleaners. The way the unit is operated, part throttle operation for instance, has a great effect upon the condition of the oil.

Dust and dirt are not confined to severe operation and dry, dusty conditions. All air in normal working operations is contaminated with so much dust and dirt. And construction equipment operates in the most severe of dust conditions much of the time. Most air filters as used today are nearly 100% perfect in their operation. However, if they are not cleaned regularly (And again, how often is regularly?) they lose their effectiveness. Oil filters have the same problem to contend with. Oil filters can be had today that will give many thousands of hours of satisfaction.

(Continued on next page)

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- Lifts up to **10,000 lbs.**
- Mounts on new or used truck
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- Fast, mobile, rugged
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New low-cost Bantam crane will easily handle over 70% of your construction-type lifting jobs at a big saving in time and overhead. Travels city streets, back road bridges, or cross country... goes into tight spots where big rigs stop. Unloads trucks... spots steel... lifts pre-fab sections, pipe, poles, tanks, etc... gets more work done per day, at higher net earnings for YOU. Write for free literature describing this new money-making Bantam, with 6 interchangeable front end attachments.

Low truck only  
**\$4865\***

with 8 x 6 truck  
**\$6215\***

plus mounting

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subject to change  
without notice.

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☐ Have Bantam  
Distributor call

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interested in ..... for .....  
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Name .....

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**SCHIELD BANTAM**

The THRIFTY machine with the BIG earning range

factory service without changing the filter cartridge or element. But again, when to change?

No one set of instructions will fit all construction equipment even of the same make or model due to the various conditions under which they may be operating, even on the same job. So the best answer is to hit upon an average of the manufacturer's "frequent", etc., and his basic recommendations, along with your own field experience.

Someday, when we really get into the push-button era, we will probably have sealed engines similar to our refrigerators. Then the oil change will be a definitely planned procedure. So, until that time comes along, oil changing will be a necessity. And how often that must be done is still the question of discussion. However, the fact remains that under one set of operating conditions enough damage may be done in a few hours of operation to require the change of lube oil. Yet other conditions may permit operation for hundreds of hours.

## Got a Chemist Handy?

How, then, is the operator or owner to know just when to drain? The only person we know that would have the complete answer is a chemical engineer with his lab and fancy equipment. This would seem rather an inconvenience to have on the average job. Therefore, it would appear that since a chemist is the only one who can give the right answers, the printed instructions with the equipment leave a lot to the imagination.

Of course I am "smart" and can tell by the feel of the dipstick, or by the odor, or from the looks, that the oil should be changed. However, if I were intelligent" I would certainly know that these methods are definitely not a true picture of the lube oil condition. Since we don't want the job cluttered up with a chemical laboratory, and can't afford one to begin with, we must continue asking questions. And we will be expecting more from manufacturers in the way of explicit, instructive answers.

Therefore, the question really remains unanswered. However, as we said before, until such time as the push-button era gives us something better, we must continue with the present method of every hundred hours of operation, or as recommended by the manufacturer, plus our own field experience. Which reminds me, I haven't changed the oil in my car yet.

# Barber-Greene *Photo-News*

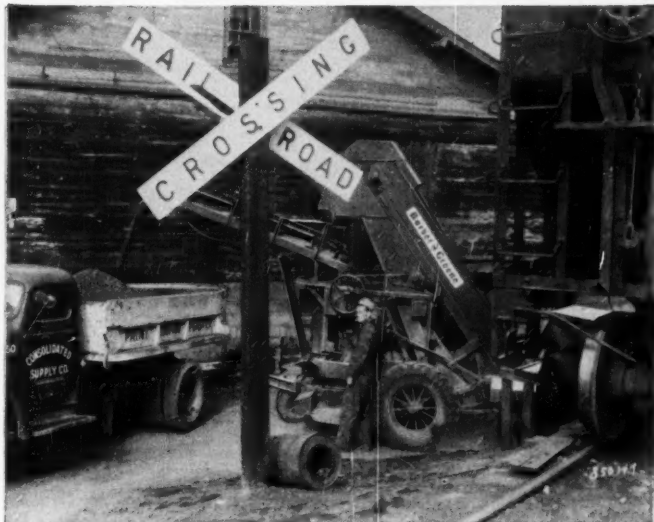
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ON-THE-JOB VIEWS AND COST-SAVING IDEAS VOLUME 1—NUMBER 3

## STOP . . . LOOK . . . LEARN

Transfer of material from hopper car to truck is a quick and easy operation at the yard of Consolidated Supply Company in Clarksburg, W. Va. The natural elevation of the railroad spur offers the unique opportunity to spill hopper contents directly onto the spirals of its Barber-Greene Swivel Conveyor Bucket Loader. Each driver loads his own truck at a 1½ ton-per-minute rate, trims every load evenly with the simply operated swivel conveyor. This pneumatic-tired Portable "Loading Hopper" moves quickly from job to job to perform all of Consolidated's loading operations throughout the yard.



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250158

## BIG OPERATOR . . . SMALL INVESTMENT

With a small investment in equipment, Albert Mullen of Kentland, Indiana, is able to meet surge demands of the paving season efficiently and economically with a constant flow of sized material. His Barber-Greene Crawler-Mounted Bucket Loader, equipped with single-deck vibrating screen, makes reclaiming, screening and loading a simple, simultaneous operation. The B-G "Constant Flow" principle saves up to 60% of all truck loading time compared with intermittent swing loading. And the investment . . . much smaller.

Thousands of operators — large and small — have found B-G Bucket Loaders the soundest investment for truck loading, screening and simple excavation. Many have found that they pay for themselves in truck-time and man-hours saved . . . profit-producers even on the smallest jobs.

## AIRPORT ON THE SEABOARD

The small coastal resort town of Brunswick, Ga., recently completed laying a 4200' aerial welcome mat for the flying sportsmen of the south. Designed to stimulate private flying—and merchants' business—in the area, Brunswick Air Park has 75' wide runways 1900' and 2300' long, serviced by 50' taxiways. Working on a small budget, they selected a 342-acre field with proper drainage that provided soil type suitable for a mix design of sand-asphalt. After runway and taxi areas were lightly graded and compacted, the top 6" of material was windrowed, then mixed with RC3 by the B-G Travel Plant. Once again it has been proved that the most economical way to build a modern landing field is by using in-place material mixed in the B-G Travel Plant.



Brunswick Air Park, the pride of this small coastal resort town. Smooth, 75' runways are aerial invitation to flying sportsmen and they can be produced at minimum cost, using local material, with a B-G Travel Plant.



Earthbound B-G machine that made it possible to welcome the flying south to Brunswick, Ga. This B-G Heavy-Duty Travel Plant mixed local, in-place material with RC3 to lay 4200 feet of runways.

## ONE MACHINE MAKES SMALL GRAVEL PLANT

Lewis Bros., of Hawley, Minnesota, has an efficient set-up for loading out screened aggregate directly from a gravel bank. A sturdy B-G Portable Conveyor is hopper-fed by a small shovel that works the face of the bank. Single-deck vibrating screen separates

aggregate from over-size for loading two trucks simultaneously. Teams of trucks are constantly on the move, keeping up with the 3-ton-per-minute loading rate of this green machine that won't jam up, and will start with a full load on the belt.

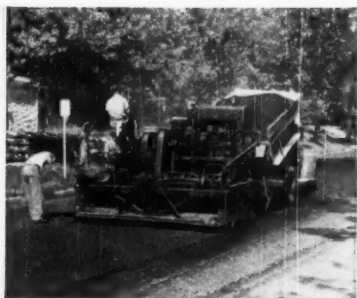


*for full, fast information on any equipment*



## QUICK WAY TO LARGE SAVINGS

High speed, efficient operations at this concrete plant—at minimum cost—are maintained by a profit-making Barber-Greene Permanent Conveyor. A fine example of efficient layout, the plant is ideally set up to minimize machine and man-hours, yet produce wet and dry concrete at the rate of 500 cubic yards a day. Here is an application—one among thousands—where standardized, factory-assembled B-G Permanent Conveyors are performing with notable success an otherwise expensive operation.



## SMOOTHER STREETS . . .

Using as a base rough brick and concrete streets that are 40 years old, Manhattan, Kansas, is providing its citizens with new, smooth streets even though limited by a rigid law governing bonded indebtedness. The logical solution to resurfacing was found in a Barber-Greene Tamping-Leveling Finisher. The two-inch hot-mix asphalt—which meets all State and Federal highway requirements—makes a smooth, ridge-free surface regardless of variations in the sub-grade. Thanks to B-G Finisher economy, the city engineer plans to transform the old streets at the rate of 30 or more blocks a year.



## SMOOTHER FLOW . . .

When the Adamston Flat Glass Company replaced a power shovel with a B-G Portable Conveyor, it found its stock pile of "Cullet" building much smoother . . . bigger at less cost. "Cullet"—pulverized waste glass, which is stored for re-use—resembles rough mush snow and tends to pack like wet sand. It is extremely abrasive, containing large pieces of sharp, thick glass, much more destructive to equipment than sand. The B-G Portable Belt Conveyor has done away with all the cumbersome, expensive handling of the past and at the same time has introduced new economy in handling this tough material.

*on these pages--see your B-G Distributor*

## AHEAD BY A LENGTH . . . WITHOUT "JOCKEYING"

This B-G Bucket Loader is a long length ahead when it comes to loading long, high, 25-ton semi's with 2" crushed stone. The long, hydraulically controlled boom permits easy load trimming regardless of truck size. The West Roxbury Trap Rock Co. is well pleased with this B-G Loader that disregards truck height and length . . . does away with "jockeying" of tricky semi-trailers—and makes tremendous savings in man-hours and equipment time.

Well balanced and controlled by an automotive type steering mechanism, this pneumatic-tired B-G Bucket Loader travels from stock pile to stock pile or from job to job at 15 miles per hour. Low overall height permits highway travel without interfering with overhead wires, underpasses, trees, etc.



450473

## SERVICE . . . RIGHT COMBINATION OF EXPERIENCE, TRAINING, ENGINEERING

Your Barber-Greene Distributor offers you the most important service available today—that of saving time and money on every job that involves the handling of all materials . . . mixing and placing bituminous surfacing materials . . . as well as ditching and snow removal. Intensive factory training and field experience have made these men specialists. They know how to apply Barber-Greene equipment to assure the most in performance—they know how to show you the best in maintenance practice. And behind their every recommendation stand Barber-Greene's own 34 years of experience in engineering and manufacture. Plan now to call your B-G Distributor. Ask him to help you get the most in cost-cutting operation by eliminating expensive equipment and manpower. For complete information—bulletins, specifications and prices on any or all Barber-Greene equipment—get in touch with your B-G Distributor, or call, write or wire directly to the address below.

## HOW TO CLEAN UP AT THE TRACK

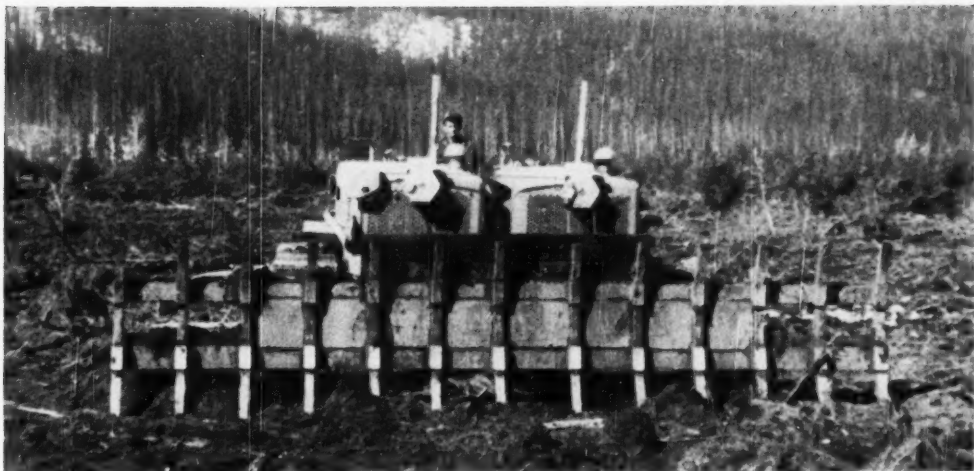
Barber-Greene is cleaning up at the Hollywood Turf Club in a way that has nothing to do with pari-mutuel prices. In the interest of safety, the track acquired a Crawler-Mounted B-G Bucket Loader that provides an effective means of cleaning the track—removing pebbles, bolts, nuts, nails, etc., that might be picked up by flying hoofs and thrown into the eyes of following horses or jockeys. Canvas-encased to cut down dust, this B-G Loader picks up the windrowed material and loads it on the separately mounted vibrating screen. Screened material is returned to the track, foreign objects are diverted into a cart towed alongside.

548155



**Barber-Greene Company**

AURORA, ILLINOIS, U. S. A.



Monstrous 21-ft dozer-rake clears Hungry Horse Reservoir as . . .

## Siamese Cat Shows Its Claws

THE SIAMESE TWIN Caterpillar tractor, sired by Peterson Tractor & Equipment Co. at San Leandro, Calif., has sprouted some wicked claws on the Hungry Horse Reservoir clearing project in Montana. There J. H. Trisdale, Redding, Calif., contractor on a 2½-million dollar section of the clearing, has fitted up the dual monster with a special combination bulldozer and rake that measures 20 ft 8 in. end

to end. Thirteen extra-heavy teeth extend about 18 in. below bottom of bulldozer blade to rip out roots and shrubs. The machine is powerful enough to knock down most trees found on the site. It's a land-clearing contractor's idea of a super land-clearing rig.

Observers estimate the rig is clearing about 2 acres per hr. This figure sounds reasonable, for if it cut a 20-ft swath at the average

rate of 1 mph it would cover 2.4 acres.

The Twin Cat, described in **CONSTRUCTION METHODS AND EQUIPMENT** April 1950, page 54, is made up of two Caterpillar D8 tractors placed side by side, with inside tracks removed and the two frames bolted together into one solid unit.

Kenneth F. Park, of Peterson Tractor & Equipment Co., supplied the accompanying pictures.



TREES AND BRUSH disintegrate under onslaught of Twin Cat land-clearing outfit.

# SLING YOUR LOAD ON A GMC-*and* *watch it roll!*



## ***These Middleweight Movers Can Take Most Anything***

**R**IG the short wheelbase with dump body, cement mixer, or fifth wheel for trailer work—or take a longer job with stake or flat body for moving what comes. Mister, you'll *never* find the like of these GMC 450-470 Series for getting your hauling done!

These babies are burly all the way through. Just check on the gear ratios you can get—

five-speed direct or over-drive transmissions plus a choice of hypoid, two-speed or double-reduction rear axles. That's why the same truck you see slogging a full load up a tough climb can beat up such a breeze on the highway.

Or put this truck on the hoist and see how it's built underneath—heavy duty in every




detail. Don't miss those alligator cross-members that put rigid strength in the frame with less dead weight. GMC's don't need fishplating to support a body. Note that the spring hangers lap around and *under* the frame—loads don't ride the rivets in GMC's. There's added safety, also, in having the *two* top leaves in the front spring wrap around the shackle bolt.

## Get Behind The Wheel For The Real Story


Drivers would rather wheel a GMC than anything else on the road. No other truck can steer as easy as these jobs with the GMC recirculating ball-bearing gear—and the wide-tread front end boosts road stability. The 120-HP valve-in-head "workhorse" engine, constant-mesh transmission, and cushion-disc clutch—these make a power team that any guy is glad to have on his side. And the GMC lifetime "six-footer" cab has room to spare for the biggest Joe in the outfit.

GMC Series 450-470 comes in wheelbase from 122 to 197 inches, and ranges from 19,000 lbs. GVW to 37,000 lbs. GCW. Let your GMC truck dealer show you full details and full specifications on the truck that's best for your own job. Then, when you read the price tag—you'll see why these GMC's are *far and ahead the best buy in the middle-duty class.*

*GMC Truck & Coach Division of General Motors*




**GASOLINE & DIESEL TRUCKS**



**GENERAL  
MOTORS**

**FROM ½ TO  
20 TONS**



Your key to  
greater hauling profits

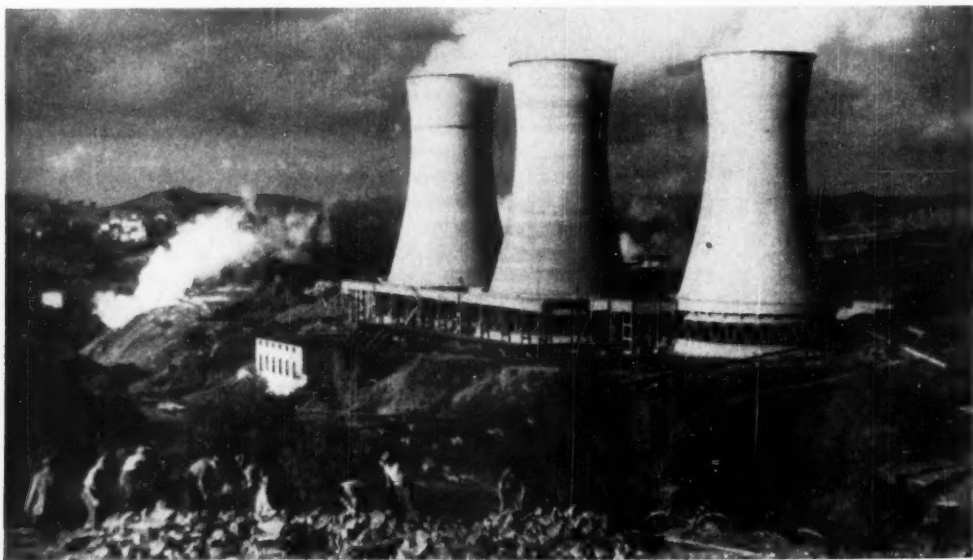
## CONSTRUCTION 'ROUND THE WORLD...



**GERMANY**—Tower crane handles large lifts on construction of Frankfurt's tallest building. Near Main River, concrete and brick structure will be 13 stories high.—Wide World Photo



**AUSTRALIA**—Scaffold hoist riding top chord of Sydney Harbor Bridge is readied for 5-yr job of painting 1,650-ft arch. More than 1,700 gal of red lead and 7,500 gal of grey paint will be used.



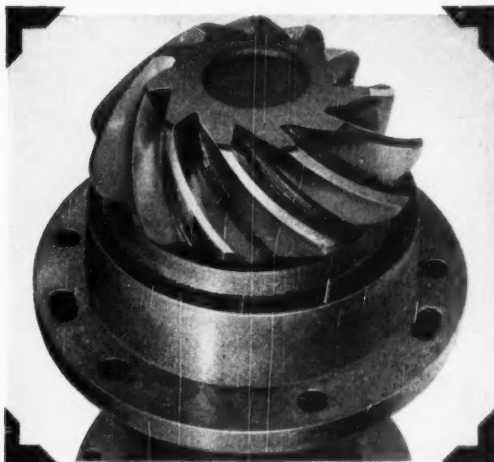
**ITALY**—Spool-shaped cooling towers are built for Marshall Plan expansion of Lardarelle electric generating station whose power source is volcanic steam. Piped from wells, natural steam is har-

passed to turbo-generators, then is condensed to produce borax and related products. Expansion will nearly double plant's yearly capacity of 1 billion kwh and 5,000 tons of chemicals.

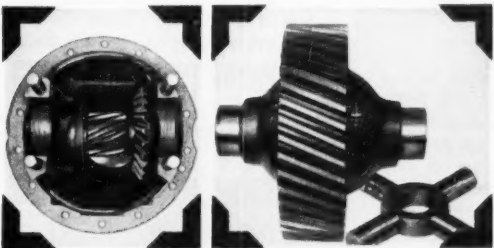
# STANDARD ENGINEER'S REPORT

LUBRICANT	DATA RPM Multi-Service Gear Lubri.
UNIT	"Semi" Truck and Trailer
PART	Final drive-Timken U-200 Axle
CONDITION	Long distance freight haul-road elev. 0 to 7200 ft.-weather -20 to 125° F.
LOCATION	Los Angeles-Albuquerque N.M.
FIRM	Illinois-California Express Co., L.A.

## Hypoid gears in good condition after 332,711 miles!



RPM MULTI-SERVICE GEAR LUBRICANT was used exclusively in the final drive from which this hypoid pinion was pulled — 459,981 miles since it was new and 332,711 miles since last overhaul. As photo above indicates, none of the gears in the unit was worn enough to warrant replacement.



ALL PARTS OF THE ASSEMBLY WERE PUT BACK IN SERVICE. Note their excellent condition despite 332,711 miles of highway work in extremes of load and weather conditions. The rear end was only taken down because the truck it was in was temporarily tied up in the shop for engine adjustment and service.

### How RPM Multi-Service Gear Lubricant prevents wear in hypoids



- A. Contains a special compound that reacts chemically with metal and forms protective lubricating coating . . . resists rubbing action of hypoid gear teeth.
- B. Withstands extreme temperatures and pressures . . . highly oxidation resistant — prevents excessive deposit formation.
- C. Provides lubricant for integral bearings and other parts. Will not separate. Inhibitors resist rusting and stop foaming in gear cases.

REMARKS: This final drive was in a transport unit hauling average gross loads of 68,000 pounds between Los Angeles and Albuquerque, New Mexico. The route is through desert and mountains from below sea level to 7200 feet. Some grades rise 2000 feet in 10 miles. Weather temperatures range from sub-zero to 125° F. in this area.

The final drive was in service from 13,000 to 14,000 miles per month. The RPM Multi-Service Gear Lubricant was drained and a new fill put in about every 35,000 miles. RPM Multi-Service Gear Lubricant provides longer gear life in all hypoid sets, truck, passenger cars or other installations. It comes in several grades to meet all conditions.



FOR MORE INFORMATION about this or other petroleum products of any kind, or the name of your nearest distributor handling them, write or call any of the companies listed below.

Trademark "RPM" Reg. U. S. Pat. Off.

STANDARD OIL COMPANY OF CALIFORNIA • San Francisco  
THE CALIFORNIA OIL COMPANY • Barber, N.J., Chicago, New Orleans

STANDARD OIL COMPANY OF TEXAS • El Paso, Texas  
THE CALIFORNIA COMPANY • Denver, Colorado



## YOU CAN TAKE IT WITH YOU

Any time you build a road just to transport sand, stone or other materials from quarry or dock to the job, you are making an unnecessary, expensive investment. Not only is it expensive—but once the job is done, you can't take it with you.

There's another kind of highway—a better kind of highway. It's a Hewitt-Robins belt conveyor system, like the one in the picture . . . the longest "roller coaster" in the world. Over seven hilly miles it stretches (here it parallels an old roadway) to move the 4,000,000 tons of limestone needed to build Arkansas' great Bull Shoals dam.

There are many advantages in belt conveyors like these, especially

in rough country. There are no roads to build and maintain. No tracks to be laid. Grades can be mastered. Rivers, roads and valleys can be bridged. And when tunnels are inevitable, you provide a passage, not a highway.

*Best of all, when the job is completed, you can—and do—take it with you!*

Hewitt-Robins builds belt conveyor systems for moving bulk materials of every kind, above and below ground. They range from standard sectional conveyors for average and above-average needs, to multi-mile installations like Bull Shoals.

Hewitt-Robins is the only organization equipped to handle the entire

job . . . engineering, conveyor machinery and belting—to take single, unified responsibility for a successful Belt Conveyor installation.

It will pay you to consider belt transportation on your next job. Let us go over facts and figures with you. Inquiries will receive prompt, experienced attention. Write Robins Conveyors Division, Passaic, N. J.

# HEWITT-ROBINS

## BELT CONVEYORS

HEWITT-ROBINS  INCORPORATED

BELT CONVEYORS (belting and machinery) • BELT AND BUCKET ELEVATORS • CAR SHAKEOUTS • DEWATERIZERS • FEEDERS • FOAM RUBBER PRODUCTS • FOUNDRY SHAKEOUTS • INDUSTRIAL HOSE • MINE CONVEYORS • MOLDED RUBBER GOODS • RUBBERLOK® ROTARY WIRE BRUSHES • SCREEN CLOTH • SKIP HOISTS • STACKERS • TRANSMISSION BELTING • VIBRATING CONVEYORS, FEEDERS AND SCREENS

## Engine Components Need Service, Too

ALL TOO OFTEN, vital components of construction equipment engines are overlooked when machines are serviced. Yet over-all economical operation is impossible unless these components are kept in top-notch shape. To help you reach this goal, the Allis-Chalmers Tractor Division Service Department, through the company's "Timber Topics", makes the following recommendations.

### Air Cleaners

Care of air cleaners is one of the most important daily tasks on a job. In dirty conditions the air pre-cleaners and oil bath air cleaners may have to be serviced several times a day. The engine will not last a normal length of time if dirt is allowed to enter. All connections between the air cleaner and engine must be kept tight and dust-proof. Use the viscosity of oil recommended by the manufacturer and keep the level at the height indicated in the cup or the instruction manual. Do not use crankcase drainings. Do not use an oil that will foam. Do not remove oil cup when engine is running.

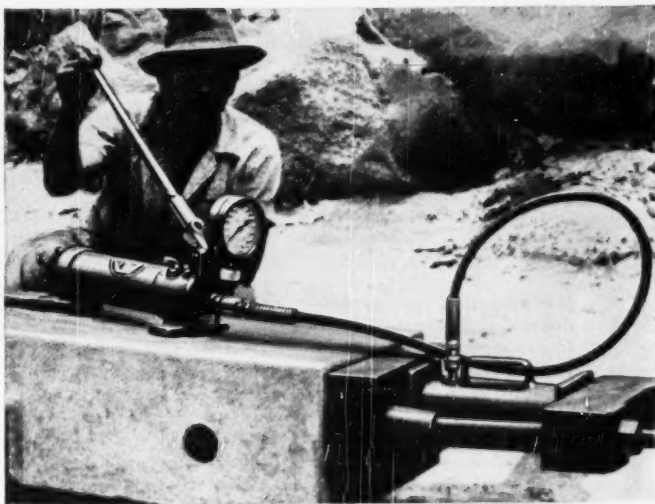
### Batteries

Check the level of electrolyte in batteries weekly or as often as operating conditions prove it necessary. Maintain the level of the solution  $\frac{3}{4}$  in. above plates by addition of clean distilled water. Keep battery and cable terminals tight and clean. Filler caps must be kept tight at all times and tops of batteries clean and dry. If corrosion occurs, clean the battery posts and terminals with a strong soda solution, then coat terminals lightly with vaseline before connecting them again. The vaseline will prevent further corrosion.

Battery failures are more numerous in cold weather because the cranking load is naturally increased by low temperatures. A battery which is fully charged at 80 deg F has only about 60% capacity at 20 deg and only 20% capacity at minus 20. Thus it is quite evident that batteries must be kept in the best possible condition in cold weather.

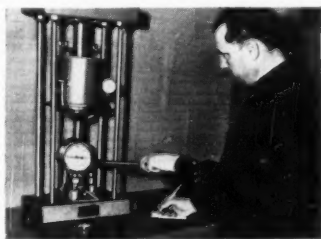
In extreme cold weather there is danger of batteries freezing if the specific gravity is low. Batteries

# use the **MAGIC** of GAUGE-EQUIPPED Blackhawk Jacks



### Pre-stressing Concrete with "Measured" Hydraulic Power

Above — a Blackhawk 50-ton "Porto-Power" Hydraulic Jack — equipped with a gauge which registers pressure exerted in pre-stressing cellular roadway slabs for a bridge. On many jobs, such low-cost Blackhawk equipment takes the place of large, costly, improvised arrangements.



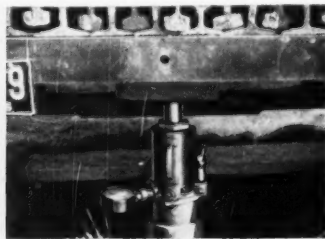
### Laboratory Testing

The heart of this testing device is a Blackhawk Gauge-Equipped Hydraulic Jack. It's being used for a penetration test on road-building material. Jack registers "lbs. total load" exerted.

- Blackhawk Gauge-Equipped Jacks (up to 100-ton capacity) do these and many other jobs**
- Test fracture points of materials
  - Check weights of cumbersome members
  - Press plastics etc.
  - Test load-bearing qualities of soil
  - Press parts together at predetermined pressures
  - Draw cables to specified tension
  - Sink piling to predetermined loads

Buy from leading supply houses

## BLACKHAWK



### Field Testing

Here's a popular set-up for testing the weight-bearing characteristics of soil prior to construction work. This Blackhawk Gauge-Equipped Jack is pushing against a load of ballast.

**BLACKHAWK MFG. CO.,**  
Dept. J-2380,  
Milwaukee 1, Wis.

Gentlemen:  
Without obligation, send catalog and prices on GAUGE-EQUIPPED Hydraulic Jacks.

Name.....

Firm.....

Address.....

City.....State.....

## INSURANCE-IN-ACTION



## Our truck dispatcher was getting over \$20,000 a year—but we didn't know it!

(Based on Hartford Claim #127763)

We operate a cartage service, making pickups and deliveries for companies that don't have their own trucks. Often our drivers collect C.O.D.'s, and they turn in the money to our dispatcher who sets up the accounts on it for our cashier. We had a very capable man in this dispatching job whom we were paying about \$4500 yearly. But that wasn't enough for him and his taste for gambling and high life. He began to hold back some of the C.O.D. collections and juggle the accounts. In less than a year, before the shortages became so great he couldn't conceal them any longer, he got away with \$16,000! Fortunately we had a \$10,000 Fidelity Bond with the Hartford which we collected in full to partially make up our loss. This experience proved to us that *all employees should be bonded and for an adequate amount!*

• • •

What about your exposure to dishonesty losses—is your business completely and adequately safeguarded against this risk? Hartford Blanket Fidelity Bonds offer the protection you need in the most modern, efficient and economical form. Your local Hartford agent or your own insurance broker can provide full details about this "Dishonesty Insurance" without obligation. Call Western Union "Operator 25" for the name and address of the Hartford representative in your community, or write to the company for a free explanatory booklet.

## HARTFORD

ACCIDENT AND INDEMNITY  
COMPANY

Hartford 15, Connecticut

Hartford Fire Insurance Company  
Hartford Live Stock Insurance Company

YEAR IN AND YEAR OUT YOU'LL DO WELL WITH THE HARTFORD



with a specific gravity of 1.225 will freeze at minus 35 deg. During freezing weather any addition of water to batteries should be made after the engine is started at the beginning of an operating period to make certain the water and electrolyte solution will be mixed thoroughly.

The electrolyte in a fully charged battery will have a hydrometer reading of 1.275 to 1.285 specific gravity when corrected to 77 deg. Specific gravity readings without correction for temperature are practically meaningless. For each 30 deg F that the temperature of the electrolyte is above 77, add 10 points to get the true specific gravity. For each 30 deg that the temperature of the electrolyte is below 77, subtract 10 points from the hydrometer reading. For example, if the hydrometer reading is 1.250 and the electrolyte temperature is 17 deg F (60 deg below 77) 1.250 minus 20 is 1.230, the true specific gravity.

If corrected readings are below 1.240, the batteries are not sufficiently charged. This might indicate that the generator or regulator requires attention. If these units are found to be satisfactory, inspect the wiring for short circuits, loose or corroded connections.

### Greases

Greases of certain kinds and consistencies are recommended for different locations on a machine as a result of years of test and experience. The manufacturer has recommended a definite grease for a compartment or bearing after having received the benefit of this experience.

(1) Obtain good grease of the grades needed on the job. Keep the containers covered.

(2) Keep the greasing equipment clean and clean all dirt away from openings and fittings when using greasing equipment.

Extreme cleaning is essential when performing a lubricating job. Allowing even a few grains of sand to enter each lubrication period will soon amount to enough to wear the part out.

### For Eye Safety . . .

NEW TRAINING FILM, "Easy on the Eyes", teaches eye safety. It tells how to protect eyesight, and shows tragedy of accidents. National Safety Council, Chicago.



## MACWHYTE WIRE ROPE AND SLINGS

**engineered to save  
you money on the job**

Ask Macwhyte to recommend the type and size of wire rope best suited for your needs. *There are a thousand and one wire ropes made by Macwhyte.*

Specifications for the correct sling for any lifting need are yours from Macwhyte for the asking.

**Prevent loss!**  
**Save time!**  
**Be sure!**

### MACWHYTE WIRE ROPE:

Available in the complete Macwhyte line are Internally Lubricated *PRE*formed Wire Ropes for all equipment—plus Galvanized, Stainless Steel, and Monel Metal Wire Ropes. Also available are special assemblies of Macwhyte Wire Rope and Industrial Standards "Safe-Lock" fittings. Fittings are attached to rope by swaging—and assemblies are made to order.

### MACWHYTE SLINGS:

Available in all types, sizes and lengths, to meet almost any lifting requirement. Macwhyte *ATLAS* Round-Braided Slings, *Drew* Flat-Braided Slings and *Monarch* Single-Part Wire Rope Slings are all made to order to fit your needs. Illustrated is a special Macwhyte *Drew* 14-part Type *ICT* Flat-Braided Sling.

### WHATEVER YOUR NEEDS

for wire rope, slings, special assemblies, solutions for special problems, ask a Macwhyte distributor or write direct to Macwhyte Company for suggestions and recommendations.

**MACWHYTE COMPANY, 2941 Fourteenth Avenue, Kenosha, Wisconsin.** Manufacturers of Internally Lubricated Wire Rope, Braided Wire Rope Slings, Aircraft Cables and Assemblies, Monel Metal and Stainless Steel Wire Rope. Our distributors and mill depots throughout the U.S.A. and other countries carry stocks for immediate delivery. Catalog on request. Mill Depots: New York • Pittsburgh • Chicago • Minneapolis • Fort Worth • Portland • Seattle • San Francisco • Los Angeles

9010W

# CONSTRUCTION EQUIPMENT NEWS • • A Preview of

By MELVIN DEAN, Equipment Editor



**Scales and Controls on Portable Bulk-Cement Batcher Are Located for Handy Operation by One Man**

Capacity of Ferguson batcher (12 ft per batch) is sufficient for supplying a dual-drum paver. Accurate weighing scales and controls are located for one-man operation. Batcher is set up and ready for work in 5

min. Over-all height in trailing position is 12 ft 6 in. Unloading ramp of batcher forms gooseneck for attaching to fifth wheel of truck, or it can be towed behind a dump truck. In the photo, a truck is delivering

bulk cement to the batcher bin, where it is carried to the weighing hopper. Batch is weighed and then dropped into the batch truck for delivering to the paver.—Shovel Supply Co., Box 1369, Dallas, Tex.



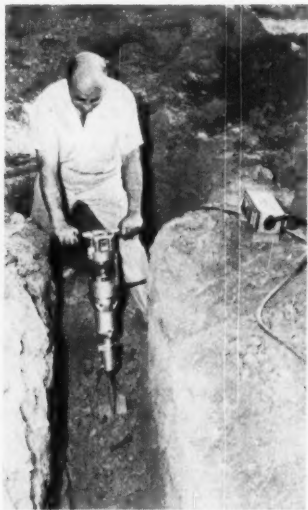
**ENGINE-OVER-AXLE GRADER—**Model 501 grader features extra-large low-pressure tires for better flotation, traction, and maximum performance. Power is provided by a 50-hp gasoline or diesel engine. A 10-gal hydraulic oil tank maintains low oil temperature. Attachments include a hydraulic scarifier with re-

placeable alloy-steel plow teeth. The 501 can be used for cutting and cleaning ditches; building, widening, shaping, and maintaining roads; and for sloping at angles as great as 1:1. Cab has an inside clearance of 6 ft 6 in. Undercoating on cab reduces noise.—Meili-Blumberg, New Holstein, Wis.



**ALL-PURPOSE LIGHTWEIGHT DRILL—**Light weight (7½ lb) and short over-all length permit one-hand operation of the CP-9 drill. Air-powered steel rotating principle is employed. Lubrication is by built-in oiler. Exhaust is right or left handed.—Chicago Pneumatic Tool Co., 6 E. 44th St., New York 17, N. Y.

## New Machinery, Tools and Equipment That Will Help You on the Job

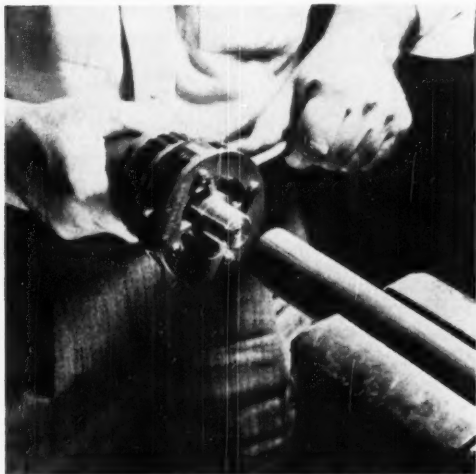


**LIGHTWEIGHT, ELECTRIC TAMPER**—Tarwater tamper delivers 1,800 blows per min. Weighing 48 lb, it is powered by any high-cycle generator. Spade or other tools are held by two cap screws.—**Tarwater Railway Supply Co., Investment Bldg., Redlands, Calif.**

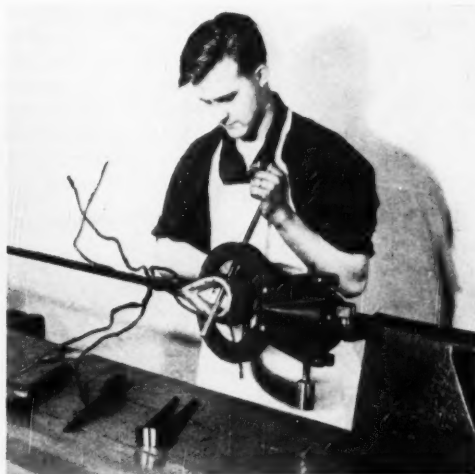


**HYDRAULIC TRACTOR-LOADER**—Oliver 77 attachment digs at either end, permitting straight-line loading and dumping. Dumping is always at forward end of tractor. Rear end-tilt is obtained by pushing bottom of bucket away from tractor. This lifts cutting edge 20 in. and thrusts it

farther into bank after tractor has penetrated to its limit. Bucket size is 9/16 yd. Unit will lift 4,100 lb to height of 8 ft; will swing 2,900 lb. Further data may be obtained from: **Maine Steel, Inc., South Windham, Me.;** or **The Oliver Corp., 19300 Euclid Ave., Cleveland 17, Ohio.**



**PORTABLE HAND THREADING TOOL FOR KARBATE PIPE**—Portable threading tool is especially recommended for use with Karbate impervious graphite pipe. It eliminates the need for extra tools and speeds on-the-job fabrication. The tool produces a clean, sharp thread. Among the features of the Karbate threader are the facts that it is light in weight and is inexpensive to purchase.—**National Carbon Div., Union Carbide & Carbon Corp., 30 E. 42nd St., New York 17, N. Y.**



**SPECIAL RIG SPEEDS SPlicing OF WIRE ROPE**—Cable-splicing machine speeds opening of strands in wire rope and tightening the loose end strands after inserting. Model 9 is designed for 1/2- and 1-in. rope, but can be used with 3/4 in. Second pair of jaws increases capacity to 1 1/4 in. Model 1 covers the 1/16- to 5/16-in. range. Straight jaws are provided for each diameter in the range of the Model 1 machine.—**Quay Industries, 910 Seventeenth St., N. W., Washington 6, D.C.**

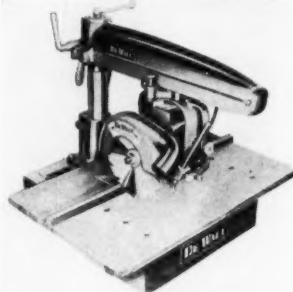


**FRONT-END POWER SHOVEL—** Movement of lifting arm and crowder arms on front-end-mounted shovel permits loading with tractor

brakes locked. Crowder arms permit digging 15 in. below wheel level, and raising loads to heights of 7 ft. After loading is accomplished, shovel is retracted to a close carrying position to prevent tipping and teetering caused by unbalanced weights. Arms can be extended to reach 48 in. in front of tractor. The overthrow-type bucket is hydraulically controlled.—**Lessman Mfg. Co., Des Moines 4, Iowa.**

**PLASTIC PIPE—**Carlton EX plastic pipe resists burst pressures to 260 psi and has increased resistance to suction collapse. Because of its flexibility and light weight (a 100-ft section of

2-in. pipe weighs 61 lb) plastic pipe is said to be extremely simple to install. The pipe can be curved to follow ditch, trench, or ground contour, or to conform to structural plan. Carlton EX is furnished in 2-, 2½-, 3-, 4-, and 6-in. dia. It can be coupled by molded plastic fittings which permit plastic-to-plastic or plastic-to-metal connection.—**Carter Products Corp., 10153 Meech Ave., Cleveland 5, Ohio.**



**RADIAL - ARM POWER SAW —** Lightweight and recessed-cabinet top design permits removal of saw unit, table, and table base from cabinet for using machine as a portable power saw. Weight of the entire unit is 115 lb. The Model GS is equipped with a ½-hp motor, can cut 2-in.-thick material, cross-cut 12 in. wide, and rip to the center of a 43-in. panel.—**DeWalt, Inc., Lancaster, Pa.**



New "UNI-CHANNEL" complete mobile, dash mount,

## The Best in 2-WAY RADIO

### CHALKS UP NEW GAINS IN THE UTILITIES FIELD

*cutting time and costs of material and crew handling.*

No half-way measures will do—not when you can have Motorola's EIGHT new advances in 2-way radio performance.

Take the new "UNI-CHANNEL" mobile Dispatcher. It has the marvelous SENSICON circuit with *permanent selectivity* and improved voice dominance over noise. It fits easily into the cab or trunk of any vehicle—with fixed-performance superiority over anything in its price class—and it's an excellent investment, *fully protected against future obsolescence!*

### **Specify Motorola—Get The Best!**

The high standards of engineering excellence, set by the world leaders in 2-way mobile radio, is built into all MOTOROLA equipment. Remember when you buy Motorola, *you'll be paying actually less for the greater value included!*



**DETECTOR FOR FLAWS IN METAL—**Dye penetrant method detects surface flaws and their subsurface manifestations in metals. It involves the use of three chemicals, and does not require any machinery or equipment. It works on magnetic and non-magnetic metals and alloys, and can detect welding flaws and cracks and internal trouble in precision-machined parts. It can also be used to test seams on pressure vessels. Any object can be tested without disassembly as long as it can be reached by paint brush or spray gun, or where dipping is possible. Test takes approximately 20 min.—**Dy-Check Co., Subs. Northrop Aircraft, Inc., Hawthorne, Calif.**

*Complete Radio Communication Systems for Industry*

COMMUNICATIONS & ELECTRONICS DIV

# Motorola

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# There's Extra Performance in Every Attachment

with  
**ALL-WHEEL  
DRIVE  
ALL-WHEEL  
STEER**

**E**xtra performance which increases profits by doing the work faster and better, and reducing investment in part-time equipment. All-Wheel Drive and All-Wheel Steer handle either a front- or rear-mounted attachment with no sacrifice of operating efficiency, where ordinary graders—handicapped by a dead front end and lack of rear steer—would be helpless through loss of traction or directional control.

**AUSTIN-WESTERN COMPANY, AURORA, ILLINOIS, U.S.A.**



**Bulldozer**



**Scarifier**



**Loader**



**V-Plow**



**Roller**

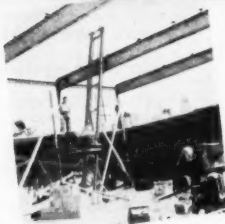
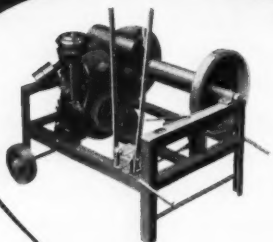


**Rotary Plow**

BUILDERS OF ROAD MACHINERY  
**Austin Western**  
SINCE 1900

# Unbeatable Combination!

## ★ KING PORTABLE HOISTS *plus* KING INCLINE TRACK



The handiest hoist ever built—no trick to operate, just 2 levers—rugged—easy to move—simple to anchor—7 different models. Safely hoist all building materials as construction progresses. Ample power—air cooled motors—use minimum fuel, even operating continuously. No maintenance except upkeep on the engine. You build the pine lumber track and platform floor—we furnish structural

steel carrier and hoisting wheels with assembly plans. Double line pull for easy hoisting—up to 1,000 lbs. Designed for use with King Hoists or any high speed hoist with 400 lb. single line pull. Elevate wheelbarrows, blocks, bricks, roofing to as high as five stories. **WRITE FOR DESCRIPTIVE LITERATURE** or See Your Distributor.

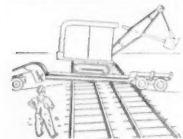
ALSO Electric Powered Winches, Hoisting Wheels, Safety Hooks

**KING** MANUFACTURING CORPORATION  
3150 W. CHICAGO AVENUE, CHICAGO 22, ILL.

## The ROGERS 4-FEATURE POWER-LIFT DEMOUNTABLE GOOSENECK



STOOPS TO  
CLEAR LOW  
OVERHEAD  
OBSTRUCTIONS



RAISES ITS  
DECK TO  
CLEAR HIGH  
BANKED  
CROSSINGS



Patents Pending

**EMBODYING A  
NEW AND VAL-  
UABLE FEATURE  
IN TRAILER  
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It embodies the kind of versatility that makes every haul easier, faster, more profitable.

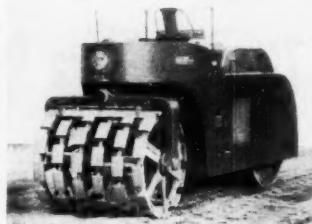
Loading, at a lower angle, is faster. Larger tires carry heavier loads legally. Unloading, reloading, detouring are avoided through quick adjustment of the deck height to different conditions encountered.

It's equally as rugged as the standard Rogers Gooseneck regardless of its detachable feature. And it's available on most Rogers Trailers and adaptable to many trailers of other makes.

Bring your equipment up-to-date and be in a position to handle operations more efficiently and more profitably.

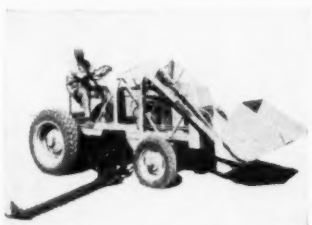
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**ROGERS TRAILERS**  
EXPERIENCE builds 'em PERFORMANCE sells 'em  
ROGERS BROTHERS CORPORATION, 220 Orchard St., ALBION, PA.



**SEGMENTED-TYPE ROLLER**—Segmented guide roll, said to give improved compaction results, is available for Buffalo-Springfield tandems in the 8- to 15-ton class. The roll consists of two sections mounted on roller bearings and free to rotate independently on the guide-roll axle. Heavy steel pads, mounted on sturdy spokes, are placed in staggered rows around the axle forming the actual compacting surfaces. Pad is designed so it enters loose material with a minimum of displacement, thus eliminating forward flow of materials. Compaction takes place at lower elevations of loose material, and pads leave material layer without disturbing compacted material. —Buffalo-Springfield Roller Co., Springfield, Ohio.

**END-DISCHARGE TILTING MIXER**—Lightweight 3½-S end-discharge tilting mixer weighs less than 800 lb. Loading height is 48 in. Mixing drum makes a complete revolution so that quick, thorough drainage of bowl can be accomplished after washing out. Mixer can be mounted on steel or pneumatic-tired wheels. Power is provided by a 2.5-hp Wisconsin engine. —Worthington Pump & Machinery Corp., Ransome Construction Equipment Sales Div., Dunellen, N. J.



**LOADER MOUNTS ON MOWER-TRACTOR**—Models 3-AM and 4-AM Shovel loaders can be mounted on tractors equipped with mowers. They are so mounted that the Shovel loader and mower operate independently of each other, and neither need be removed for operation of the other. The Model 3-AM has a 1,800-lb lifting capacity, a ¾-yd bucket, and a 7-ft 6-in. dumping clearance. The 4-AM has a 2,500-lb capacity, a 1½-yd bucket, and an 8-ft 6-in. dumping clearance. —Lull Mfg. Co., 3612 E. 44th St., Minneapolis 6, Minn.

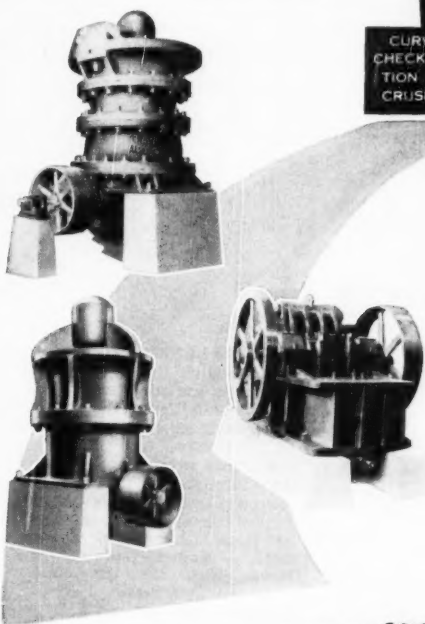
it's easier to meet "tough" engineering specifications

for **Uniform cubical aggregate** with

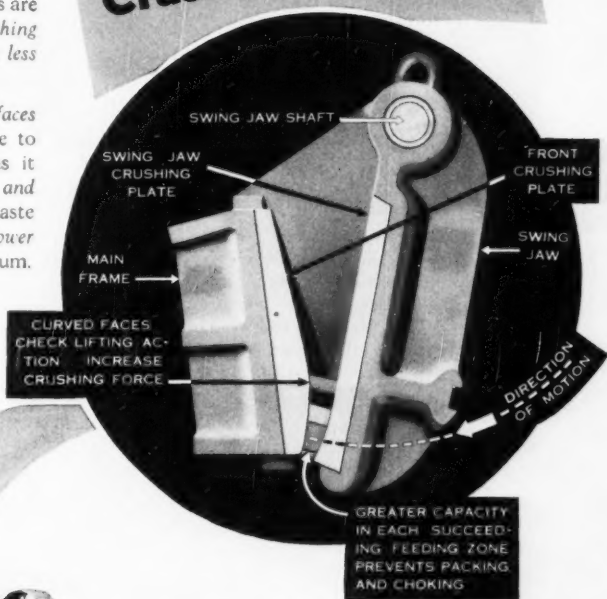
# Traylor

All Traylor Jaw and Gyratory Crushers are standard equipped with *Curved Crushing Surfaces* to produce *better aggregate at less cost per ton.*

Traylor *Curved Crushing Surfaces* apply power as a *direct crushing force* to quickly nip and reduce each rock as it enters the crushing chamber. *Lifting and churning is eliminated.* Consequently waste fines, slivers and discs . . . as well as power loss . . . are reduced to an absolute minimum.



## CURVED Crushing Surfaces



### No Choking . . . No Packing Keeps Work on Schedule

With Traylor *Curved Crushing Surfaces* each succeeding feed zone has greater capacity than the preceding zone. As material is reduced it drops *freely* into the next stage of reduction. Traylor *Curved Crushing Surfaces* insure a steady, *balanced flow* of uniform, cubical aggregate through every stage of primary and secondary stone reduction. Write for free bulletins on the Traylor Crushers you need.

# Traylor

Jaw, Reduction and Gyratory Crushers  
Rod Mills • Crushing Rolls  
Apron and Grizzly Feeders

TRAYLOR ENGINEERING & MANUFACTURING CO.  
179 Mill St., Allentown, Pa.

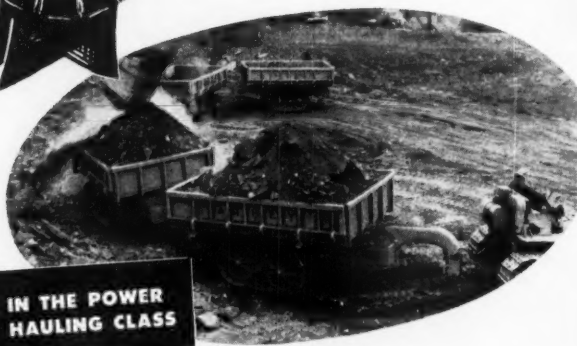
Sales Offices: New York, N. Y., Chicago, Ill., Los Angeles, Calif.  
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# Athey TRAILERS...



**IN THEIR  
CLASS**



**1ST IN THE POWER  
HAULING CLASS**

Cross-country hauls over unimproved roadways are "duck soup" for Athey Forged-Trak Dump Trailers. Rugged, built to last through years of tough service, Athey Forged-Trak Trailers follow wherever the sure-footed tractor leads.



**1ST IN THE SPEED  
HAULING CLASS**

Where haul roads are long and maintained, Athey PD10Q or PD10GP Trailers take over to lead the class in profits. Matched to the power and speed of the "Cat" DW10, Athey Rubber Tired Trailers are backed by 24 years of trailer experience.

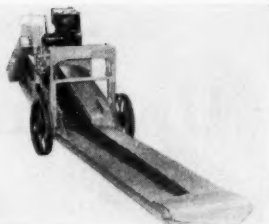
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5631 West 65th Street  
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**Athey**

**EARTHMOVING TRAILERS**

You will always find Athey at the head of the profit class. Long on years of service... short on repair and maintenance, Athey Trailers are an investment for profit!



**UNDER-CAR UNLOADER**—Combination belt and positive chain-drive hopper-bottom car unloader handles sand, gravel, crushed stone, or any other materials loaded in hopper-bottom cars. Capacity of the new machine is 3 tons per min.—**George Haiss Mfg. Co., Inc., 381 Canal Place, The Bronx, New York 51, N. Y.**

**HYDRAULIC JACKS**—Complete line of hydraulic jacks covers a size range from 1½ to 100 tons. All models can be used in vertical or horizontal position. Jack handles must be removed from pump socket in order to open release valve. Bases are ribbed to obtain firm ground bearing.—**Star Jack Co., Inc., Elmwood Park, Chicago 35, Ill.**



**AIR LINE LUBRICATOR**—Automatic lubrication for tools using 10 to 50 cfm is provided by this air line lubricator. Transparent Plexene bowl, designed to hold 6 oz. of light oil, provides oil feed through a porous bronze wick. Normally, pressure drop through the lubricator will not exceed 1 psi. Quantity of oil dispensed into the air stream is dependent upon amount of air passing the wick.—**Keller Tool Co., Grand Haven, Mich.**

**ENGINE-OIL CHANGER**—Vacuum-type engine oil changer completes oil changes in approximately 3 min. Vacuum is supplied by connection to the engine intake manifold. Oil is drawn out through a quick-coupling nozzle inserted in dip-stick opening. Engine is stopped by safety switch when drainage is completed.—**The Electric Heat Control Co., 9123 Inman Ave., Cleveland 5, Ohio.**

HERE

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*Make more money*

- Save expensive lumber and carpentry labor
- Complete each job faster
- Use the same forms for a wide variety of work
- Use the forms over and over — they're built to last longer
- Get a better quality of finished work

## ...with **BLAW-KNOX** STEEL CURB AND GUTTER FORMS

HERE'S the fastest, most economical method of forming concrete curb, curb and gutter, integral curb or sidewalks you ever saw! One set of Blaw-Knox Steel Forms handles *every* job from simple straight work to serpentine or curved shapes, without the expensive carpentry that boosts man-hour costs and cuts profits. Easy to set and strip, they get the job finished on schedule and well within your estimate. You can use them repeatedly in combinations to fit every requirement. Costly hand finishing is eliminated and finished jobs have a smooth perfection impossible to achieve with wood forms. Form maintenance is practically non-existent.

Start your set of Blaw-Knox Steel Forms *now*—expand it at any time to meet future requirements.

### THERE'S A BLAW-KNOX "COMPLETE PACKAGE" FOR EVERY CONSTRUCTION NEED

There's everything you need for low-cost construction work in the "Complete Package" of Blaw-Knox equipment—Clamshell and Concrete Buckets, Road Forms, Aggregate and Cement Batching Plants, Central Mixing Plants, Subgraders, Paving Spreaders, Finishing Machines, and a complete Ready-Mix Plant including Truck Mixer Loading Plants and the Hi-Boy Trukmixer with the revolutionary Revolving Hopper. Ask for detailed information.

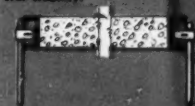
WRITE FOR BULLETIN 2259 for complete information—28 pages of detailed illustrations show form set-ups for every type of work with complete instructions on how to use them. You'll find *your* job illustrated—you'll see how to make more money on every job.



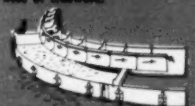
**CURB AND GUTTER FORMS.** For combining concrete curb and gutter where curb is bottomed.



**STRAIGHT CURB FORMS.** For curb with both faces vertical. Auxiliary bracing system for added stability.



**SIDEWALK FORMS.** Formed for any required width or thickness of sidewalk.



**FLEXIBLE STEEL WALL FORMS.** For curved work of variable radius. Steel forms, gutter forms and "battered" curb forms can be set in any desired radius.



**FROM FORMS TO PAVING TO FINISHING ALL YOUR PAVING EQUIPMENT**

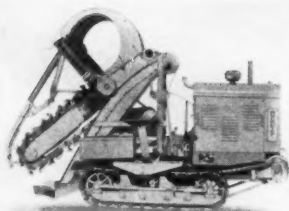
# BLAW-KNOX

BLAW-KNOX DIVISION of Blaw-Knox Company

Farmers Bank Bldg., Pittsburgh 22, Pa.

Birmingham • Chicago • New York • Philadelphia • Washington





**SERVICE UTILITY DITCHER** — Buckeye Model 402 ditching machine has a maximum depth of 4 ft; maximum cutting width of 8 in. Powered by a 47-hp gasoline engine, it has

a top digging speed of 1,308 ft/hr. Left-hand crawler is adjustable vertically 8 in. permitting work on uneven terrain or hillsides. Head and tailshafts are split for ease of service. Ground bearing pressure is 6.1 psi.—Gar Wood Industries, Inc., Dept. 022-10, Findlay Div., Findlay, Ohio.

**LIGHTWEIGHT BUILDING PANEL**

—Laminated, lightweight building panel is composed of a 1½-in. core of Kaylo insulation faced with ½-in. cement-asbestos boards. It has high structural strength and is resistant to moisture, flame, and fungus. The Kaylo boards can be installed with ordinary tools. They carry a 1-hr. fire-resistance rating.

Each panel measures 4x8 ft. Kaylo panels offer complete curtain walls or non-loadbearing sections which require no painting, furring, plastering, or other finishing. Or, they may be decorated by conventional means.—Owens-Illinois Glass Co., Kaylo Div., Toledo 1, Ohio.



**GOLDEN ANNIVERSARY TRUCKS**

—Mack's Model A Golden Anniversary trucks are powered by a new Magnadyne engine. The Model A's range in size from a 17,000-lb unit for medium-duty hauling, to 40,000-lb in the tractor-semi-trailer model for heavy-duty highway work. Axles are adaptable for a wide range of applications by single or dual-reduction drives with the Mack balanced bogie for 6-wheelers and a wide choice of ratios in all types. The Model A-20 is powered by a 107-hp Magnadyne engine; the A-30, by a 122-hp Magnadyne engine; and the A-40—available as a dump truck, tractor, 6-wheeler, or highway type—by a 140-hp Magnadyne engine.—Mack Trucks, Inc., 350 Fifth Ave., New York 1, N. Y.

**BUILDING COATING MATERIAL**

—Dura-Brick coating is recommended for new home construction or for remodeling. It provides a brick-like surface and is highly weather resistant. Applications consist of three layers of the mixture applied over a covering of 15-lb rag felt base. The third coat, colored as desired, is combed to simulate brick texture and is then lined off by a special knife so that the white undercoat shows through as mortar joints.—Wisconsin Dura-Brick Co., 4709 W. Center St., Milwaukee 10, Wis.

**UNDERGROUND CONDUIT INSULATION**

—Concrete for insulation of underground conduit is composed of portland cement, vermiculite aggregate, and a special type waterproofing admix. entirely wrapped in a waterproof envelope consisting of three moppings of hot pitch and two layers of tar-saturated felts. This results in a permanent, rot-proof insulation which will not disintegrate from wetting or exposure to the elements. The material is applied after all piping operations are completed, so that the Z-Crete forms a monolithic embedment around the pipes.—The Zonolite Co., 135 S. LaSalle St., Chicago 3, Ill.



**When the World Needs a Lift**

UNIT 357 on "earth moving" job, lifting globe into position at Midwest Fair exhibit.

**It Picks a UNIT to do the Job!**

Yes... it's really amazing what you can do with a UNIT Crane or Excavator. Take a UNIT 357 Mobile Crane, for example. It travels anywhere! Any time! Powered by ONE engine... controlled and operated by ONE man. Compact, it has light-truck mobility — the smoothest operating and easiest handling crane made. Works efficiently even in small yards where space is limited. FULL VISION CAB gives operator complete visibility in all directions.

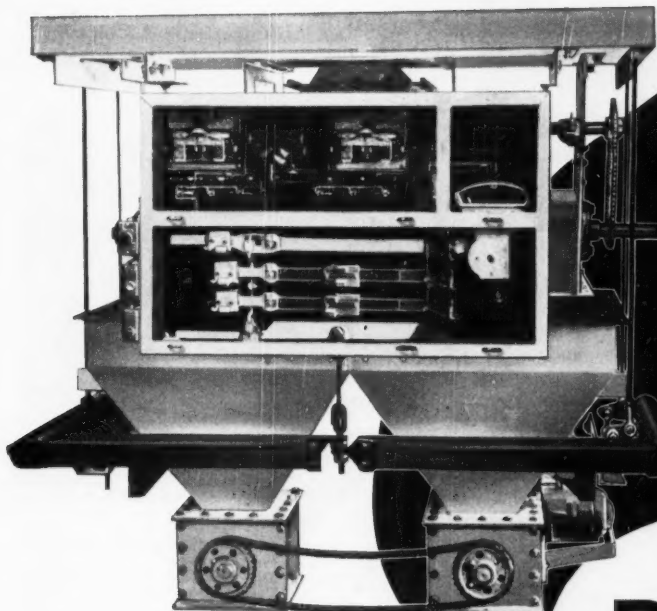
UNIT 357 is self-propelled... mounted on six pneumatic tires... duals on the rear... singles on the front. Balanced weight distribution keeps entire undercarriage on ground while working. Dimensions meet all highway requirements. Get the complete UNIT 357 story. Write for bulletin.

**UNIT CRANE AND SHOVEL CORP.**

6305 WEST BURNHAM STREET • MILWAUKEE 14, WISCONSIN, U. S. A.



SHOVELS • DRAGLINES • CLAMSHELLS  
CRANES • TRENCHES • MAGNETS



# WEIGH OUT AHEAD

OF THE HIGHEST  
PRODUCTION  
DEMAND!

## THE NEW **BUTLER** DUAL AUTOMATIC CEMENT BATCHER

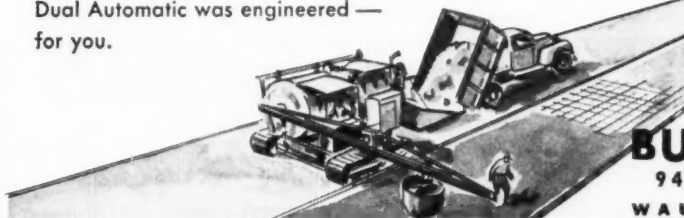
Incredible speed in batching together with split-pound accuracy and fool-proof operation — that's the Dual Automatic Cement Batcher, a new triumph of BUTLER Engineered Design.

Almost twice as fast as single batching equipment, it weighs out and simultaneously discharges two batches in less than 25 seconds. And the Dual Automatic meets specifications in states where interlocked equipment is required.

Highway and airport construction is reaching new highs month by month. And there's no predicting what turn in events may make construction soar to unprecedented heights.

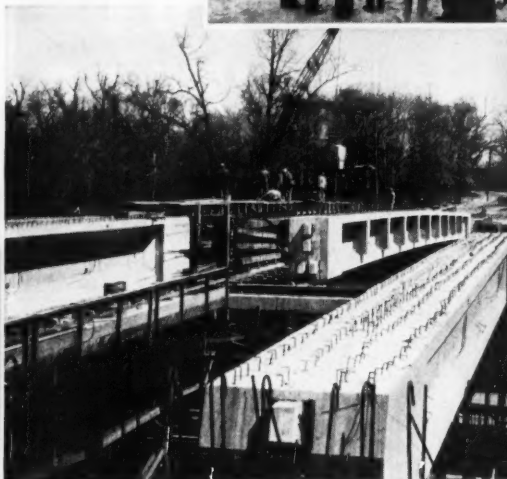
It's the contractor with fastest, most automatic equipment who will get the big jobs and the biggest profits. That's why the BUTLER Dual Automatic was engineered — for you.

Shown in this new Bulletin are the latest in BUTLER Roadbuilders' Plants — the best in time-saving, efficient batching equipment. Send for your FREE copy. Ask for Bulletin 205.



**BUTLER BIN CO.**  
949 BLACKSTONE AVE.  
WAUKESHA, WISCONSIN

A few of the 500 engineers and invited guests who witnessed load being applied to test girder which withstood almost 12 times the designed working load of 750 pounds per lineal foot.



#### WALNUT LANE BRIDGE

**BUILT BY** City of Philadelphia, Pa., under supervision of Samuel S. Baxter, Assistant Chief Engineer, Bureau of Engineering, Surveys and Zoning. **GENERAL CONTRACTOR:** Henry W. Horst Company, Philadelphia. **DESIGNER & CONTRACTOR** for prestressed girders: The Preload Corporation, New York, N.Y. **READY MIXED CONCRETE:** Warner Company, Philadelphia.

**DIMENSIONS OF CENTER GIRDERS:** Length, 160 ft. Depth 6 ft. 7 in. Width, top flange, 51 in.; bottom flange, 30 in.; web, 7 in.

## Prestressed concrete proves its vast possibilities

Because of its unique properties, prestressed concrete offers to architects and engineers new construction opportunities that are almost without limit.

Among its many advantages are these: It requires less material, yet is stronger and more elastic. Internal stresses can be so accurately computed that the high qualities of modern materials can be more fully utilized than ever before. Thus it becomes practical to design structural members of lighter weights and longer, straighter spans and to build bridges and buildings of more graceful appearance. And prestressed concrete

opens new opportunities in the field of prefabrication under close shop control.

Because prestressed concrete requires less material than conventional designs, substantial savings can often be made. For instance, the City of Philadelphia estimates savings of about \$300,000 on the new Walnut Lane Bridge—the first bridge constructed of prestressed concrete in America.

All the materials to be used in this bridge had to possess known characteristics, be uniform, pass rigid tests. Specifications required that the concrete reach a compressive

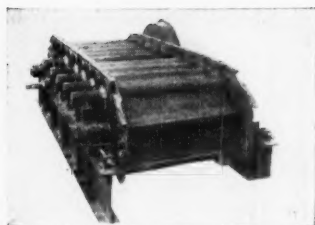
strength of 5400 psi. before prestressing. With 8½ bags of Lehigh Cement per cubic yard and a 2-inch slump, the concrete in the test girder reached a strength of 5800 psi. in 14 days.

Whatever your cement needs, there are Lehigh Cements to meet them. Our Service Department will be glad to help you with your specific problems.



**LEHIGH PORTLAND CEMENT COMPANY • Allentown, Pa. • Chicago, Ill. • Spokane, Wash.**

**LEHIGH PORTLAND CEMENT • LEHIGH EARLY STRENGTH CEMENT • LEHIGH AIR-ENTRAINING CEMENT • LEHIGH MORTAR CEMENT**



#### HEAVY-DUTY PRIMARY FEEDER

—Jumbo feeder is available in a 72-in. width and in lengths up to 60 ft. Features include interlocking support points on the pans proper, and clean-out wedges in the pans link to remove dirt on the return side. Pan construction eliminates bolts and rivets. Upturned lugs at ends of pan form an interlocking continuous lip for reducing spillage. Pans and load are supported on three rollers keyed to heavy shafts. Return idlers and screw take-up are provided.—Pioneer Engineering Works, 1515 Central Ave., Minneapolis 13, Minn.

#### CONCRETE-FLOOR ENAMELS —

Chemically inert enamels resist action of mold growth, gases, and chemicals which ordinarily deteriorate concrete floors and walls. Applicable by brush, average coverage of Hysol enamels is 350 sq ft/gal. A solution of inert synthetic resins, they have high thermal and chemical stability and are resistant to wear and abrasion.—Houghton Laboratories, Olean, N. Y.



#### AERIAL REVOLVING LADDER—

Hydraulic aerial revolving ladder can be positioned at any point in an 85-deg arc and rotated through a 360-deg circle. It reaches 35 ft into the air. Power is supplied by a power take-off mounted on the chassis transmission. Ladder fly section is extended manually. The ladder can be mounted on any 1½-ton chassis, or heavier, with dual rear wheels.—The American Coach & Body Co., 9503 Woodland Ave., Cleveland 4, Ohio.



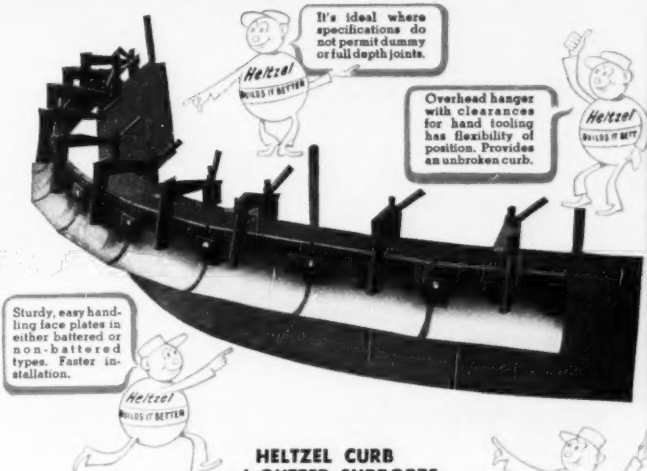
# HELTZEL

## SUPERIOR CURB & GUTTER

## Forms

Demand for Heltzel forms comes from experienced contractors who know Heltzel forms save time and money. **TIME** — because firmer installations can be made faster. **MONEY** — because Heltzel equipment lasts longer and involves less labor on the job. The example below of a flexible form is typical of Heltzel better built forms.

- CURB FORMS & ACCESSORIES
- COMBINED CURB & GUTTER
- SIDEWALK FORMS
- RIGID RADIUS FORMS
- FLEXIBLE FORMS
- SPECIAL FORMS



Sturdy, easy handling face plates in either battered or non-battered types. Faster installation.

It's ideal where specifications do not permit dummy or full depth joints.

Overhead hanger with clearances for hand tooling has flexibility of position. Provides an unbroken curb.

#### HELTZEL CURB and GUTTER SUPPORTS

The only flexible form with three alternate methods of support — (1) Full depth division plates, (2) Skeleton division plates, and (3) Overhead hangers. All Heltzel forms improve contractors' operations, because they speed up job while making the work easier.

#### PUT HELTZEL TO WORK MAKING MONEY FOR YOU

Before you buy, before you start a job — check with Heltzel! Heltzel better built curb and gutter forms in standard types will save for you. Special shapes designed by Heltzel to job specifications make difficult jobs click like run-of-mine work. Write for information now.

HELTZEL STEEL FORM & IRON CO., WARREN, O., U.S.A.

Please send information regarding:

CURB and GUTTER FORMS \_\_\_\_\_  
ROAD and AIRPORT FORMS \_\_\_\_\_  
BATCHING PLANTS and BINS \_\_\_\_\_

Firm \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

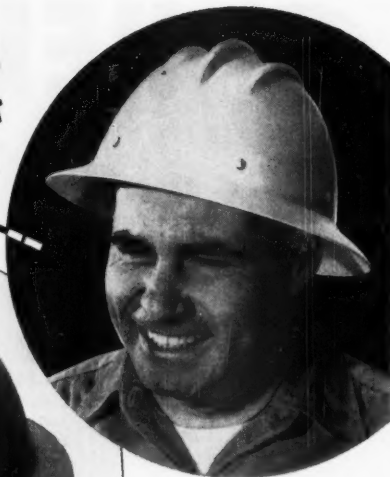
Signed \_\_\_\_\_



# HELTZEL

STEEL FORM & IRON CO.  
WARREN, OHIO • U. S. A.

**"GLASS" HATS**  
are stronger  
than steel



I'm plenty safe  
in this  
metal hat

**Glass or Metal...**

## **HARD BOILED\* HAT** protection can't be beat

Now you can get the famous Bullard shock-absorbing safety hat design in either molded Fiberglas or special alloy aluminum. Unique ribbed crown is the safest ever built. Greatest protection; light weight; easiest to wear on any job.

"Glass" Hard Boiled Hats are available in solid molded colors and white—even a glow-in-the-dark model; passes all tests for electrical shock resistance; impact resistance; is water- and flame-resistant.

Aluminum Hard Boiled Hats are handsomely finished in satin-like natural metal. Passes standard drop tests; safe to wear where electrical shock is no hazard.

Keep your men better dressed; safer, cooler and more comfortable with Hard Boiled Hats.

**SAVE MONEY**

Simplify stock problems; one size fits all heads; instantly adjustable. Six-second hammock-sweat-band change. Chin straps, lamp brackets and winter liner available.



Write for circular and prices



\*Trade Mark  
Registered



**E. D. BULLARD COMPANY**

275 Eighth St., San Francisco 3, Calif.

DISTRIBUTORS IN PRINCIPAL CITIES

**FIRST IN HEAD PROTECTION**

### **PLUG-VALVE LUBRICATOR—**

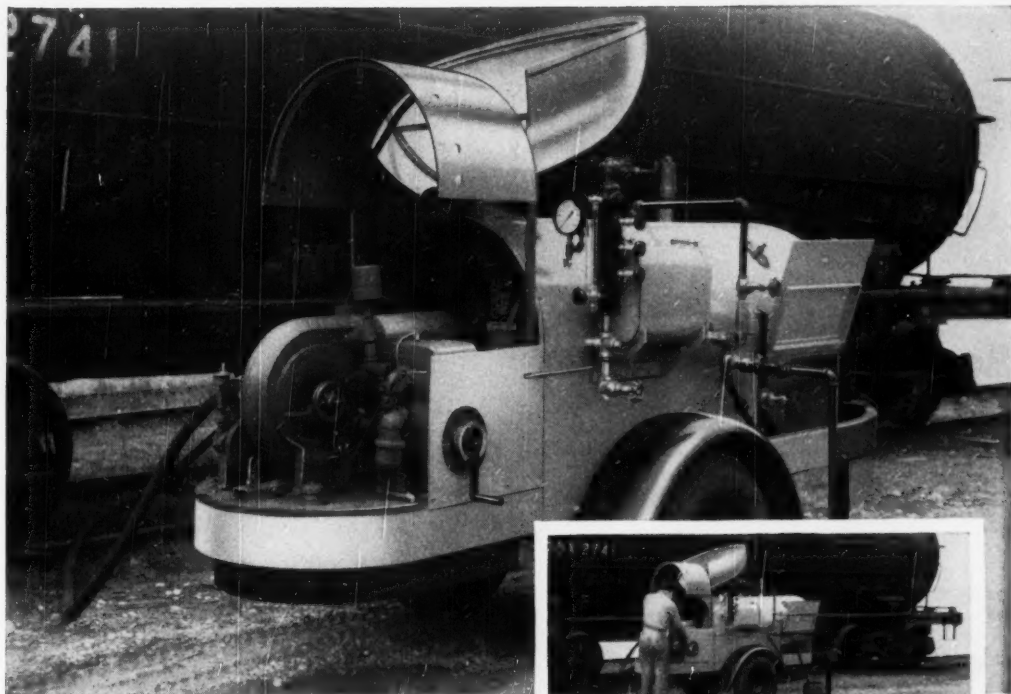
Automatic lubricator forces measured amount of lubricant into lubricating channels of plug valves each time valve is opened and closed. The Delta unit can be used with valves from ½- to 20-in. size. The valve may be opened and closed 50 to 100 times before reservoir must again be filled. To fill, hose connection of Delta lubricant gun is snapped on to top fitting and plunger handle given a few strokes.—Delta Engineering Sales Co., 806 Louisiana Ave., Shreveport, La.



**LAYOUT PENTAPRISM —** Ground and drill-hole layouts, earthwork mensuration, cross-sectioning work, stope surveys, foundation layouts, and other applications involving angles or multiples of 90 deg. are instantly checked with the Wasatch constant deviation pentaprism. These pentaprisms give foresight images that are erect and positive. Backsite alignment is accomplished by two pairs of V sights opposed at 90 deg. to each other. The instrument is 4½ in. long and weighs 2½ oz.—Stratex Instrument Co., 1861 Hillhurst Ave., Los Angeles 27, Calif.

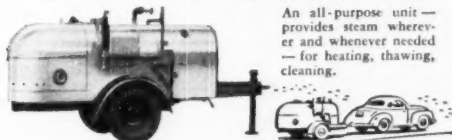
### **FIBERGLAS EXPANSION JOINT—**

Non-extruding joint material consists of an asphalt-impregnated bonded-glass wool board faced on both sides with a heavy asphalt-saturated kraft paper. The Fiberglass expansion joint features: Light weight, will not decompose or rot, absorbs less than one-half of the volume of water permitted by specifications, and is said to recover more than 70% of its original thickness when subjected to extreme temperatures. It is available in ½-, ¾-, and 1-in. thicknesses, in 24-in. widths, and in 10-, 11-, and 12-ft lengths. Special sizes are available.—Keystone Asphalt Products Co., Div. American-Marietta Co., 43 E. Ohio St., Chicago 11, Ill.



## FAST STEAMING—FOR FAST TANK-CAR HEATING

### Trailer or Truck Mounted for Quick Job-to-Job Transport



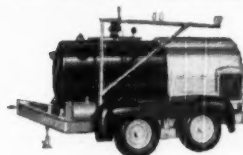
An all-purpose unit—provides steam wherever and whenever needed—for heating, thawing, cleaning.

### ... Use Less Fuel—Water—Work With a CLEAVER-BROOKS Mobile Tank-Car Heater

Designed for fast steaming, the Cleaver-Brooks gives you 125 lbs. steam pressure in 20 minutes—the only tank-car heater with the fuel-saving four-pass flue travel construction. No water problem—full condensate recovery and return to heater under pressure.

Built for full capacity—full time work—available in three sizes, skid or trailer mounted 1 car heater (17 bhp)—2 car heater (28 bhp), 3 car heater (42 bhp). Write for the Cleaver-Brooks Tank-Car Heater Catalog.

### Working Mate to the Tank-Car Heater — The Pumping Booster



Heat only what you need—not necessary to heat contents of tank car—with a Cleaver-Brooks Pumping Booster. No steam or water required for operation with this oil-fired, high efficiency unit. Available in 2 sizes, skid or trailer mounted.



Write on your business letterhead for the Bituminous-Mix Calculator—a ready reference slide rule showing weight of mix needed in lbs. and tons based on area and depth of area to be covered.

CLEAVER-BROOKS COMPANY  
387 E. Keefe Avenue, Milwaukee 12, Wisconsin



# Cleaver-Brooks

BUILDERS OF EQUIPMENT FOR THE GENERATION AND UTILIZATION OF HEAT

# Only ALLIS-CHALMERS MOTOR GRADERS have the

**More and Better Work Done  
with Less Power Effort**



The **FOLL-AWAY** Moldboard has an **inleture** or **Variable Radius Curve** that lifts material up and moves it away in an easy, rolling fashion. Each part of the blade forces material toward a different point instead of a fixed point—prevents packing, power waste and drag on entire machine. Material moves **WITH** an Allis-Chalmers Motor Grader—not against it!



**MORE  
THOROUGH  
OIL MIX**



**TOUGH  
GRADING  
HANDLED  
EASIER**



**FAST,  
ACCURATE  
FINISHING**



**MORE  
EFFICIENT  
SOD  
STRIPPING**

## Check these other outstanding advantages of Allis-Chalmers Diesel-Powered Motor Graders:

**EXCLUSIVE TUBULAR FRAME** Strong, shock-absorbing, protects control rods inside frame.

**HIGH CLEARANCE** under circle and axle to handle bigger windrows.

**TRAVEL SPEEDS** smoothly synchronized with operator controls. All the needed power applied as required.

**FULL RANGE OF BLADE POSITIONS** . . . plus leaning front wheels, for easier ditching and sloping. Seven pitch adjustments, two offset positions.

**GREATER STABILITY.** Lift cases directly over circle turn—blade held firmly on work through direct down pressure . . . precision cutting.

**GENERAL MOTORS 2-CYCLE DIESEL POWER**—dependable, economical, instant-starting.

**PROPERLY BALANCED** for maximum traction and control.

**PLUS** . . . easier steering, full visibility, larger clutch, electric gauges, numerous other time- and money-saving features.

# ROLL-AWAY

# Moldboard

**Standard On All  
Allis-Chalmers Motor Graders**

<u>Model</u>	<u>Brake Hp.</u>	<u>Weight</u>
AD-4	104	22,140 lb.
AD-3	78	21,825 lb.
BD-3	78	19,042 lb.
BD-2	50.5	17,772 lb.
D	34.7	8,500 lb.

*The Moldboard  
That Moves Material  
the Easiest Way...  
by Rolling it!*

*"Seeing Is Believing."*

Ask Your Allis-Chalmers Dealer For a Demonstration . . . NOW!

# ALLIS-CHALMERS

TRACTOR DIVISION • MILWAUKEE 1, U. S. A.

FOR GREATER PRODUCTION  
FOR EASIER OPERATION  
FOR SIMPLIFIED SERVICING

**THE ANSWER TO THE  
ENGINEER'S PRAYER**

**BREAKS  
CONCRETE  
FASTER** | **TAMPS BACKFILL  
BETTER AND FASTER  
FOR LESS**



**THE NEW, MORE POWERFUL  
MIGHTY "B" MIDGET**

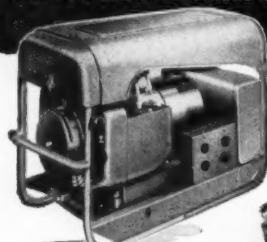
Stronger construction, greater hitting force, increased mobility and easier operation are a few of the many improvements of this great new pavement breaker. Actual performance records under the toughest conditions show that this machine has a capacity of breaking 12" concrete. Operates on either 105 or 160 C.F.M. Compressor. Conventional Automotive rear end drive—equipped with 710 x 15 tires—manual or automatically operated.

Write for Complete Information to Dept. I.

**R.P.B. CORPORATION**

2715 E. 11th St., Los Angeles 23, Calif.

**Cut Costs!**  
with **ONAN** portable  
**ELECTRIC PLANTS**



*Take 'em Anywhere!*

**Use Electric Tools on Every Job**

Carry, wheel, or truck 'em to any spot and plug in for all the electric power you need. Lightweight, Onan air-cooled electric plants supply power for electric drills, saws, planers, spades, tampers, lights . . . any electrical equipment. Lightweight A.C. models: 400 to 3,000 watts. D.C.: 750 to 5,000 watts. (Heavy-duty gasoline or Diesel plants to 75,000 watts.)

Write for Folder

**D.W. ONAN & SONS INC.**



6767 Registon Ave., Minneapolis 5, Minnesota

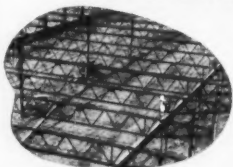
**SAW-BLADE PRESSURE REGULATOR**—Save-A-Blade dial on Clipper masonry saws adjusts cutting pressure to conform to hardness of material being cut. Adjustments are available for cutting brick or tile; concrete products; and glass and marble. Cushioning effect is provided by a pressure equalizer spring. —Clipper Mfg. Co., 2809 Warwick, Kansas City 8, Mo.

**SPRAYABLE ROOF COATING**—Vinyl-plastic film provides a water-proofed continuous seal roofing. This material is sprayed on from parapet to parapet without seams, laps, or joints. The entire roofing consists of a coating of the Cocoon plastic, a

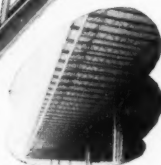
coat of mastic containing gilsonite asphalt, and a coat of gilsonite vehicle with aluminum paste for insulation. In addition, a prime coating of Flex-Seal clear is required to provide a good adhesive base. —R. M. Hollingshead Corp., 840 Cooper St., Camden 2, N. J.

**ABRASIVE FLOOR AGGREGATE**—Non-slip floor surface is achieved by imbedding Bendelox particles into cement or asphalt floors. Bendelox is produced by crushing blocks of ceramically bonded aluminum oxide, and then screening to standard sizes. Bendelox is blue-grey in color. —Metals Recovery Co., Ann Arbor, Mich.

**FOR STRENGTH...  
ADAPTABILITY...  
ECONOMY...**



Campbell 66 Motor Terminal  
Svan Const. Co.  
R. X. Grueninger, Arch.



Bettendorf Super Market  
Dickie Const. Co., Wischmeyer  
and Lorenz, Arch.

**USE LACLEDE STEEL JOISTS**

- **FASTER CONSTRUCTION** — Light . . . easily handled . . . prefabricated to speed the job.
- **ADAPTABLE** — They combine efficient structural function with architectural versatility.
- **ECONOMICAL** — They assure more room at less cost. Their high strength plus light weight provide substantial savings in foundation and framework, and utility conduits, pipes and lines are easily threaded through the open webs.

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Multi-Rib Reinforcing Bars . . Steel Pipe . . Steel Joists & Nailor Joists . . Welded Wire Fabric . . Form & Tie Wire . . Round & Square Spirals . . Conduit . . Corrugated Steel Centering . . Electrical Weld & Gas Weld Tubing.



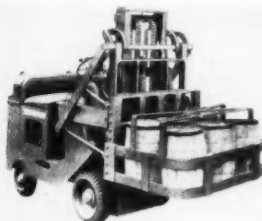
**LACLEDE STEEL COMPANY**

St. Louis, Mo.



#### GRADER HAS 12-FOOT BLADE—

Large 12-ft blade on Model 900 motor grader is designed for greater angularity and pitch making it possible to cut 3-ft ditches with proper slicing action. This 12,000-lb grader is powered by a 50-hp Minneapolis-Moline gasoline engine. Wheelbase is 16 ft 4 in. The 900 is completely hydraulic. Attachments include: Low-lift material-handling buckets, bulldozer, vertical moldboard, 9-tooth scarifier, V-type or reversible snow plow, Hi-Lift loader, and snow bucket.—American Road Equipment Co., Omaha, Neb.



**KEG-HANDLING DEVICE**—Materials handler picks up, transports, stacks, and unloads (without a pallet) six 200-lb kegs of spikes in a single maneuver. As guide frame is lowered over kegs, the unloader is retracted pulling kegs firmly against three rubber-covered shoes which project from the face of the carriage. Shoes and guide frame are detachable, permitting use of Model LT-44 Towmotor lift truck with standard forks.—Towmotor Corp., 1226 E. 152nd St., Cleveland 10, Ohio.



#### UNIVERSAL DRAFTING TOOL—

Plastic drafting device serves as a straight-edge, T-square, triangle (all angles), protractor, parallel rule, and lettering guide. The instrument is self-contained and requires no attachments or board clamps. Feature of the instrument is the precision-ground roller which causes it to always roll in a straight line.—Loomis Industries, 516 Park Way, Piedmont 11, Calif.



## profit-wise Contractors buy MICHIGAN 1/2 yd. Crawler Cranes!

There's no other half-yard crawler crane excavator as good . . . dollar for dollar . . . as the MICHIGAN! Why? Because only MICHIGAN gives you these job-proved, "big-machine" features:

Independent travel to save minutes on every move, hours on every job. Tractor-ease steering to enable faster, easier maneuvering. Automatic, self-locking crawler brakes to give complete safety when working on grades. Smooth fingertip air control to eliminate operator fatigue and that "afternoon let-down."

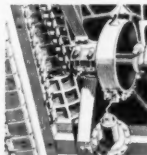
But, that's not all. There's the oversize internal-tooth circle gear . . . the hook rollers and independent drum assemblies . . . and there are many more. Compare MICHIGAN with any other half-yard crawler crane . . . then you, too, will agree it's your best buy! Take the first step in getting more for your money . . . write, wire or 'phone for complete details.

## MICHIGAN POWER SHOVEL COMPANY

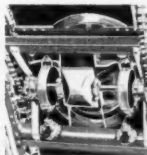
495 Second Street, Benton Harbor, Michigan, U. S. A.



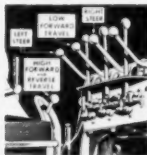
**INDEPENDENT TRAVEL** — Standard equipment. Crawler mechanism powered through intermediate shaft's forward and reverse gears — not through swing gears.



**AUTOMATIC-LOCKING BRAKES** — Hold crawlers against downhill movement when working on grades, a feature operators appreciate. Brakes lock instantly, are released by air rams.



**TRACTOR-EASE STEERING** — Operator can maneuver a Michigan accurately and fast because it steers like a tractor — steering brakes are used instead of conventional jaw-clutches.



**FINGERTIP AIR CONTROL** — Air pressure to a clutch ram is regulated instantly as operator desires, thus giving him complete control and "feel of the load" at all times.



Quicker than lightning, the self-contained RAMSET TOOL instantly sets drive pins or threaded studs through steel or wood, into steel, concrete, masonry, other hard materials. Slashes costs and time up to 80% for such fastening jobs. Takes less than a minute from start to finish—faster than you can load and light your pipe! Here's why:

1. No drilling, chipping, plugging, tapping.
2. Insert RAMSET FASTENER into tool, with power charge.
3. Place against work spot. Then RAM! The fastener sets, instantly, tightly.
4. No make-ready or clean-up work. No muss, no fuss, no dirt.
5. Light, compact RAMSET TOOL needs no external power. It's completely self-contained.
6. No hauling heavy equipment. RAMSET TOOL can be carried in one hand and used in tight, confined spaces.
7. Small first cost, pays for itself quickly—and it's savings and profit from then on!

Every day, thousands of users prove the value of RAMSET SYSTEM... the pioneer in powder-actuated fastening methods. A 15-minute demonstration will prove its cost-reducing, time-saving values. Call your local RAMSET Specialist or use coupon for complete details.

**STEMCO CORPORATION**  
12117 Berea Road • Cleveland 11, Ohio

**ASK FOR DEMONSTRATION AND DETAILS!**

Stemco Corporation, 12117 Berea Road, Cleveland 11, Ohio

Please send further information on cost-cutting, time-saving value of RAMSET FASTENING SYSTEM.

Name \_\_\_\_\_ Title \_\_\_\_\_

Company \_\_\_\_\_

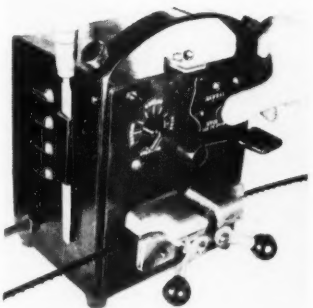
Kind of business \_\_\_\_\_

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**POWER SAW AND FILE**—Metals, wood, plastics, and other materials up to the size of a 36-in. I-beam can be quickly cut by the Mid-States Saw Gun. Power is provided by electric drill, air drill, or through a flexible shaft. The Saw Gun handles standard types of hack-saw blades and files. Units are supplied with or without drills, and in models to connect with various size drill chucks or flexible shafts. — **Mid-States Welder Mfg. Co.**, 6025 S. Ashland Ave., Chicago 36, Ill.

**INTERLOCKING SHINGLES**—Asphalt Sta-Lock shingles feature an interlocking design which assures double coverage over 100% of the roof area; triple coverage over 42%. Each shingle is secured to roof or adjacent shingles at 8 separate points. The shingles are available with Celotex color blends and deep-grained texture. — **The Celotex Corp.**, 120 S. LaSalle St., Chicago 3, Ill.



**SAW-BLADE WELDER**—Automatic saw-blade welder permits on-the-spot welding and annealing of saw blades up to 12 in. wide. Bandsawing machines equipped with this new welder permit internal sawing operations as the blade can be rewelded at the machine after threading through the work. All controls are clearly marked. Accurate alignment of blade ends is made possible by cam-operated jaws. Weld selector automatically provides correct spring tension to welding jaw. Thickness gage tests proper blade thickness at the weld. — **DoALL Co.**, Des Plaines, Ill.

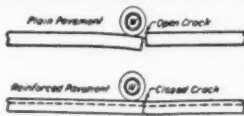
## On the Pennsylvania Turnpike

### American Welded Wire Fabric



Longer paving slabs, fewer joints, improve riding qualities on concrete highways reinforced with American Welded Wire Fabric. Reduced rate of cracking, prevention of heaving and spalling, also reduce maintenance costs, increase service life of the highway.

As the wheel load approaches an open crack in plain pavement, one slab end carries the entire load. As the wheel load approaches the closed crack in pavement reinforced with American Welded Wire Fabric, both slab ends, instead of one, carry the load, preventing damage to the slab and to the subgrade.



THE men who plan and build our modern concrete superhighways have helped to make American Welded Wire Fabric the world's most widely used reinforcement for pavement construction.

American Welded Wire Fabric keeps cracks that may form tightly closed—preventing progressive damage—distributes stresses, strains and impact in all directions.

U·S·S American Welded Wire Fabric reinforcement in rolls or in flat sheets is easily handled, lies flat and stays in place. This means important savings in labor costs and construction time.

Standard styles of U·S·S American Welded Wire Fabric are available in every locality from jobbers' stocks when furnished in rolls. When flat sheets or special styles of fabric are required—you can depend upon our Donora, Pa. and Joliet, Ill., mills to maintain your construction schedules.

When you are planning any type of concrete construction, our technical staff will supply complete data on specific designs and standard styles of fabric that are most readily available. Literature containing valuable information is also available. Write to our nearest sales office today, you incur no obligation.

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*Every concrete paving job needs*

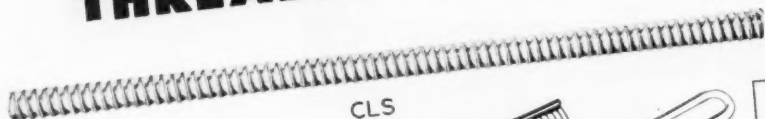


## AMERICAN WELDED WIRE FABRIC

*reinforcement*

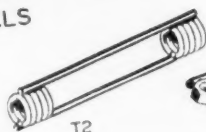
UNITED STATES STEEL

# RICHMOND CONTINUOUS THREADED LAGSTUD



The tough, coarse-threaded Richmond Lagstuds are a versatile supplement to the Tyscru System. Every day in dozens of ways, they'll save time and money on your jobs. Used with Standard Tyscru's, they provide a fully adjustable form tying method. They are coupling units for Adjustable Tyscru's. Imbedded in a grouted hole or in concrete, they furnish dependable anchorage. With the Handle Lagnut, they substitute for a Tylag. The Richmond Handle Lagnut in all cases replaces a wrench — makes installation and stripping fast and simple. There is no waste when using Richmond Lagstuds; even the pieces left after cutting to length can be salvaged for future use. The threads are really tough and fast.

CLS



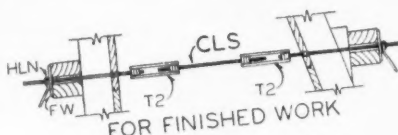
T2



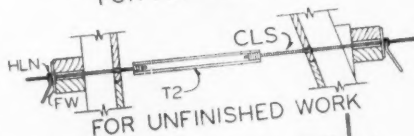
HLN



FW



FOR FINISHED WORK



FOR UNFINISHED WORK



AS AN EXTERNAL TIE

YOU SAY RICHMOND  
HELPS REDUCE  
THE GAMBLE IN  
THIS BUSINESS?

SURE! WITH RICHMOND'S  
PLANNING & ESTIMATING  
SERVICE, HOW CAN YOU GO  
WRONG?

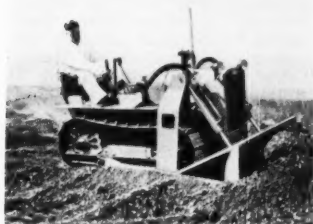


RICHMOND KNOW-HOW—DEPENDABILITY—SERVICE—ESTIMATES & JOB PLANNING



**CONCRETE-BLOCK LIFT TRUCKS**—Prongs of the No. 333 lift truck are spaced to handle two 16-in. stretcher courses. Especially designed for handling concrete blocks, this three-prong truck is completely automatic. Stretcher course is held in place by grippers which are forced against the blocks by the weight of the load.—Schmidgall Mfg. Co., Peoria, Ill.

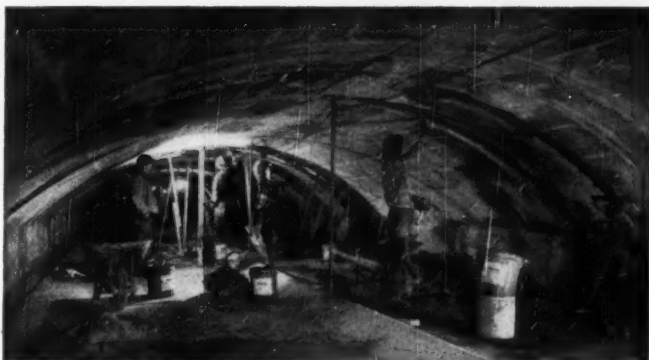
**FIRE-RESISTANT WALLBOARD**—Firestop gypsum wallboard when applied as a single 5/8-in. thick single layer on both sides of a load-bearing wood stud partition has a fire-resistance rating of 1 hr. A single layer of 1/2-in. thickness on similar construction has a 45-min rating. Firestop Bestwall may be used for new construction or remodeling. It is available in sheets 4 ft wide, 6 to 12 ft long, and 5/8 and 1/2 in. thick.—Certain-teed Products Corp., 120 E. Lancaster Ave., Ardmore, Pa.



**NARROW-GAGE TRACTOR**—Ustrac crawler-type tractor is 37 in. wide. It has a drawbar horsepower of 20.4. Front-end hydraulic loader has 1/3-yd capacity. It is easily converted to use with a bulldozer blade. Ustrac has 4 speeds forward plus instant reverse.—Federal Machine & Welder Co., Tractor Division, Warren, Ohio.

**GOOSENECK-BOOM TRENCH HOE**—Attachment of P&H Model 255A excavator makes possible high-speed operation, increased digging depth, and maximum ruggedness. Operation is speeded up by a 2-part hoist line. Power-operated auxiliary gantry raises and lowers the boom. The machine can cut vertical end at start of trench and can trim vertical walls. There is a chopping action due to special hoe-stick linkage.—Harnischfeger Corp., Small Excavator Div., 4494 W. National Ave., Milwaukee 14, Wis.

## Underneath the river



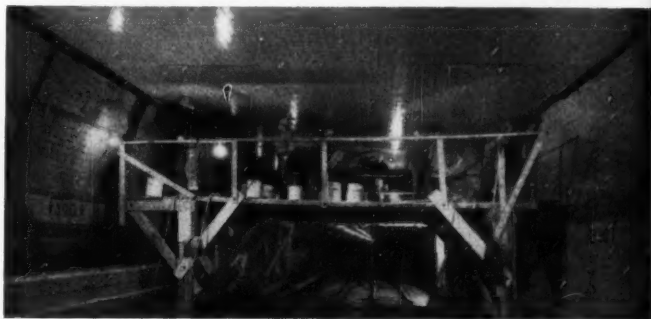
THORITE Patching Mortar Crew at work in Air Tunnel under East River, New York.



Sealing Leaks in Traffic Tunnel with WATERPLUG.



Sealing Drain Pipe Channels in Tunnel with WATERPLUG.



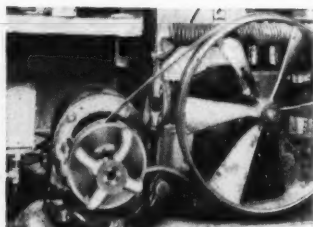
WATERPLUG Crew at work, before placing of tile lining, Battery Tunnels, East River, New York.

On many of the largest underground projects in the Americas and in foreign countries, WATERPLUG solves, for the contractor, his water problems. The job may be small or it may be large, the results are the same — Successful.

Get our 20-page brochure, pictorially describing, in detail, "How To Do It." It's yours for the asking. — No. 140.



**Standard Dry Wall Products**  
**BOX X, NEW EAGLE, PENNSYLVANIA**



**VARIABLE-SPEED CLUTCH PULLEY** — Variable-speed clutch pulley is automatically controlled by engine speed, and makes possible infinite gear-ratio changes. The automatic clutch is centrifugally oper-

ated. Clutch allows for independent action of pulley belt by an intermediate ball bearing. During acceleration, pulley belt is picked up by the pulley with no wear on the belt. Starting load is thus picked up gradually, without strain.—**The Driv-Way Lite Co., P. O. Box 2850, Denver, Colo.**

**SILICONE-INSULATED WELDER** — Portable ac welder features silicone insulation for high margin of safety and operating dependability. The 6WK20H measures 12x17x23 in. and weighs 154 lb. Current range is 30 to 250 amp. Welder is easily transported in an automobile trunk. Ampere range is covered by three

overlapping current ranges which permit precise current control. Standard model operates on 220 volts, with a 440-v model available.—**General Electric Co., Apparatus News Bureau, Schenectady 5, N. Y.**



**HEAVY-DUTY LIFT TRUCKS**—New series of heavy-duty Lifttrucks is available in three capacities—5, 7½, and 10 tons. Dual pneumatic traction tires are mounted on a dead axle that supports the chassis and fork load, relieving the differential drive from this service. Lifting guides are interlocked to provide good alignment and equal distribution of fork loads. Attachments available include shovels, special forks and fork extensions, power spreaders, rotary aprons for forks, and special winches and crane booms.—**Silent Hoist & Crane Co., 841 Sixty-Third St., Brooklyn 20, N. Y.**

**MOBILE RADIO UNIT**—FM 2-way mobile radio unit is designed specifically for true adjacent-channel systems. The Uni-Channel Sensicon Dispatcher is available for operation in the 25-50 megacycle or the 152-174 megacycle band mobile service bands. It has a rated RF power output of 12 watts in the low band and 10 watts in the high band. Models are available for operation from 6-v dc or 117-v ac primary power sources.—**Motorola, Inc., 4545 Augusta Blvd., Chicago 51, Ill.**

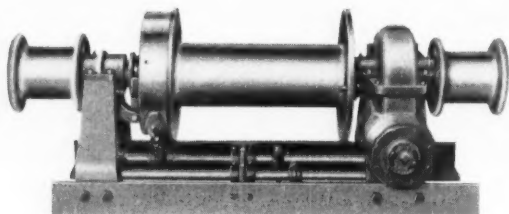
**PULLER LINE EXPANDED**—Addition to Proto line of puller items includes: Bearing separator-puller plate, 14 step-plate adapters, 2 jaws, and 2 screw tips. The separator-puller features flat surfaces and knife-like edges that permit insertion behind gears and bearings where space is limited. The step-plate adapters fit into ends of hollow shafting or housing and provide a base for a puller screw when forcing bushings, gears, and pulleys. They are also useful for installing oil seals. The new items cover a large range of sizes.—**Plomb Tool Co., 2209 Santa Fe, Los Angeles, Calif.**

# PULL *and* POWER

Tulsa Winch models for all trucks from ½-ton up.



Tulsa Winches for all crawler tractors complete with transmission, line roller assembly and mounting brackets ready for installation.



To get the most work from your tractor or truck, install a Tulsa Winch. Available in 28 different models in capacities from 6,000 to 80,000 pounds, there is a Tulsa Winch for every construction job. Get in touch with your nearest Tulsa Winch distributor now or write direct to . . . . .

\*Reg. U. S. Pat. Off.

**Tulsa Winch**  
TULSA, OKLAHOMA  
DIVISION OF  
VICTOR INC.

815-37 E. First Street

CUMBERLAND gives you

*ALL 10!*

## No. 8. Water Retention ✓

Excessive suction of moisture by masonry units has spoiled many a good job.

The exceptionally high water retention of Cumberland Masonry Cement, seen in the graduate at the right (see photos), sharply reduces suction. This means the mortar retains its plasticity longer, shows fewer cracks through shrinkage, makes stronger joints.

Test after test, job after job, show that Cumberland Masonry Cement with its pleasing light color is *better* cement. That's why every year more and more architects, engineers and masons throughout the South are turning to Cumberland Masonry Cement for better construction.



Bradley County High School gymnasium, Cleveland, Tenn. Architect, Selman T. Franklin; contractor, Grover C. Lee, Cumberland Masonry Cement used throughout.



Cumberland Masonry Cement

Ordinary Masonry Cement



*Cumberland*  
PORTLAND CEMENT COMPANY

Chattanooga Bank Building • • Chattanooga 2, Tennessee

Portland — High Early Strength — Air Entraining — Masonry

Any quantity of Cumberland Masonry Cement will be shipped in mixed carloads with other types of Cumberland Cement.

## PERFECTION



**RUGGED POWER 1918**



This modern unit is Perfection's Model 827 Heavy-Duty Iso-Draulic ROLL-A-LIFT mounted with a sturdy type 354 Body.

## RUGGED POWER 1950

Perfection was one of the pioneers in the independent designing and building of Bodies and Hoists for all makes of trucks.

Today, having worked hand in hand with truck manufacturers for 32 years, they know that we build units that stand the gaff—Hoists that will lift more than required and do it longer, faster, steadier and more safely than other units of the same rating—Bodies that are engineered for the jobs to be done. Dealers and users know that a strong, progressive organization stands back of every unit.

\*Note: An enlarged mounted photo of the old truck pictured above (free of charge and with no advertising) is yours for the asking. Write today.

**THE PERFECTION STEEL BODY COMPANY**  
Galion, Ohio, U. S. A.

**PERFECTION**  
STAKE and DUMP BODIES  
HYDRAULIC HOISTS

**FOR ANY TRUCK**  
STANDARD or SPECIAL UNITS  
IN ALL SIZES • FOR ANY USE

### ALL-PURPOSE SNATCH BLOCKS

—Lock-pin design of the LeBus snatch blocks does away with threaded bolts and nuts. Sheaves are designed to permit use of wire line or manila rope. These blocks are available in 4½-, 5¾-, 6-, 8-, and 10-in. sizes.—**LeBus Rotary Tool Works, Inc., Box 2352, Longview, Tex.**

### ALUMINUM SCAFFOLD CLAMP—

Pipe and clamps for erection of lightweight scaffolds are now made of a new aluminum alloy. The line is comprised of four types of clamps with load capacities comparable to steel. Use of Acrominum alloy results in reduced erection costs, cheaper transportation costs, and less loss of pipe due to distortion, as the material is highly flexible.—**Aerow, Inc., 420 Lexington Ave., New York 17, N. Y.**



### PORTABLE PAINT SPRAYER—

Plant uses jet-propulsion principle to supply pressures up to 40 lb without pump or compression tank. Powered by electric motor, the Genwind unit can be used for spraying paints, adhesives, cleaning solutions, or for air-pressure cleaning of machinery. Trigger control on gun eliminates nozzle adjustment during operations, and permits controlling amount of spray without stopping the job.—**Genwind Corp. of America, 701 Seneca St., Buffalo 10, N. Y.**

### BELTED GENERATOR —

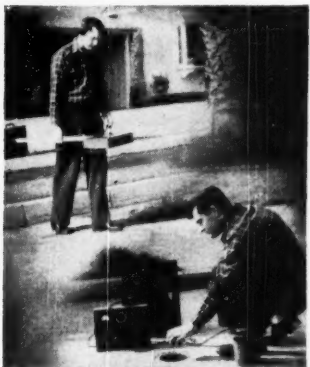
Electric generators can be belted to any available power unit or tractor. Furnished in two sizes—3 and 5 kw—they are designed for operation at 1,800-rpm 60-cycle 120-v. Frame is of drip-proof construction for service when exposed to the weather. Slide rail permits adjustment of belt tension after tractor or power unit has been spotted in place.—**Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago 5, Ill.**



**METAL-POST STRAIGHTENER**—Powered by a 10,000-lb hydraulic jack, the Porter metal post straightener operates in any position. The jack has a full-swiveling handle to permit pumping at the most convenient angle. Lever-operated valve provides quick, easy control.—**H. K. Porter, Inc., Somerville, Mass.**

**PORTABLE ELECTRIC SAW**—Six-inch Thor saw features heavy-duty construction. Other features include elimination of worm and bevel gears, die-cast aluminum housings, steel inserts for bearings and threads to maintain critical parts in permanent alignment, built-in saw blower, and steel rip guide.—**Independent Pneumatic Tool Co., 175 N. State St., Aurora, Ill.**

**PAINT-REMOVING BURNER**—Oxyacetylene flame is combined with a low-velocity flow of pure oxygen in this paint-removing burner. The burner is designed for attachment to the Torchweld 75 hand-cutting torch. Replaceable wear-resistant guide shoes maintain correct distancing of burner from metal surface to be cleaned. Speed is estimated at 600 sq ft/hr using a 4-in. burner.—**National Cylinder Gas Co., 840 N. Michigan Ave., Chicago 11, Ill.**



**PIPE LOCATOR, LEAK DETECTOR**—The Dualtronic is a combination pipe locator and leak detector. Thoroughly tested, the Dualtronic is said to be easy to handle, inexpensive to operate, and to be light in weight. It is an all-electronic instrument.—**The Goldak Co., 1503a W. Glenoaks Blvd., Glendale, Calif.**



*Enjoy*  
**BETTER HEAD  
PROTECTION**  
*with a genuine*  
**M·S·A\***

*Skullgard*



There's only one SKULLGARD—the only protective hat high-pressure molded of laminated bakelite—a material proven through years of rugged service to provide the best head protection! Skullgards also give you a special crown reinforced with a steel wire screen molded within the hat, high-quality inner head cradle and sweatband, easy-going wearing comfort with light weight, correct balance and self-ventilation . . . ask for a demonstration!

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**MSA**

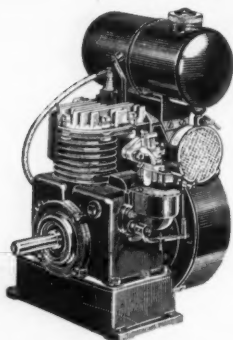
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At Your Service:

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Model K7-1, 1 1/4 H.P. 4-cycle, single cylinder, air-cooled. Length 13", width 14", height 17", Weight 38 lbs.

**POWER FOR:**

Concrete Mixers  
Gravel Graders  
Road Oilers  
Conveyors  
Compressors  
Pumps  
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Chain Saws  
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And other uses.

## Four-Cycle, Air-Cooled KOHLER ENGINES

**Compact • Quick-Starting  
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Kohler Engines are designed, engineered and built to give the same dependable, economical service that has won world-wide acceptance for Kohler Electric Plants in construction and other industries. Made in several sizes, they are suited to a wide range of uses. Kohler engineers will gladly assist in working out applications for your particular requirements. Write for information. Dept. 24-W, Kohler Co., Kohler, Wisconsin. Established 1873.

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### BIGGER PAYLOADS with **WELLMAN** Williams Type **BUCKETS**

• Exclusive features in design and construction make payloads bigger...at lower cost! Weight is balanced, not cumbersome. Extra strength is built into every part with the sturdy welded rolled steel construction pioneered by Wellman, the leader for over fifty years. A type for every service!

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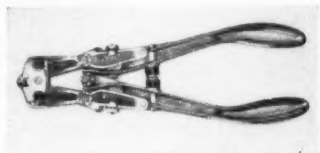
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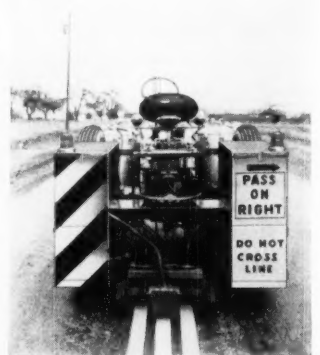

### MOTOR SWEEPER FOR AIRPORTS

—Model 450-2 motor sweeper features dual gutter brooms, dual controls, and swath-sweeping width of 10 ft. The hydraulically operated hopper has a capacity of 84 ft. Rear-wheel steering provides a short turning radius. Two-speed conveyor system assures fast loading of hopper. Power is provided by 100-hp Ford engine.—Wayne Mfg. Co., Pomona, Calif.



### METAL-LATH CUTTERS—Center-

cut jaws with specially pointed noses allow cutting of metal lath in narrow spaces. Elimination of protruding screws and bolts prevent catching when positioning for a cut. All types of metal lath—flat-ribbed, reinforced, or special patterns—up to 3/16-in. dia may be cut.—H. K. Porter, Inc., Somerville, Mass.

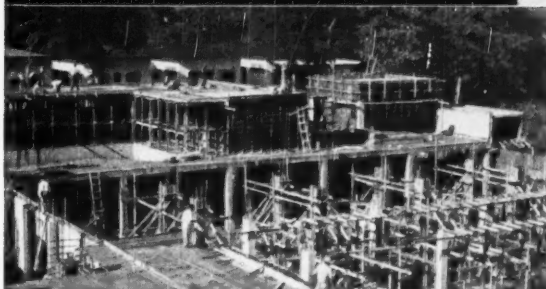


**TRAFFIC-LINE MARKER** — Self-propelled traffic-line marker is recommended for high-speed highway work. It is tractor mounted, 2-man operated, and produces stripes from 3 to 8 in. wide, in solid or broken pattern. Adjustable bead dispenser is standard equipment. Paint guards control width of line and insure clean edges and uniform paint distribution. Over-all width of machine is 5 ft 6 in.—The Gledhill Road Machinery Co., Galion, Ohio.

**Estimated Forming  
Material Costs  
—\$80,000<sup>00</sup>\***

**UNI-FORMS  
did it for  
\$43,251<sup>40</sup>†**

**UNI-FORMS  
saved \$36,748<sup>60</sup>**



TUBERCULOSIS HOSPITAL, Rio Piedras, Puerto Rico  
ARCHITECT: Isador Rosenfield  
CONTRACTORS: Mendez, Grillasco, Nolla, Galib and Marquez, Inc.

UNI-FORMS built this 800 bed hospital in record time . . . formed walls, slabs, beams, columns, tunnels, retaining walls . . . and saved \$36,748.60 in forming material costs alone!

UNI-FORMS reached the job ready to use . . . provided faster, smoother forming cycles . . . labor costs were 1/2 the estimate . . . possible only with UNI-FORMS!

You can use UNI-FORMS . . . to form any type of concrete . . . to save time, labor and material . . . to assure more profit on every yard of concrete you pour.

**BILL OF MATERIAL FOR FORMING CONCRETE  
ON TUBERCULOSIS HOSPITAL, RIO PIEDRAS, PUERTO RICO**

**\*ESTIMATED:**

1,000,000 Bd. ft. of lumber required for forms, walers, alignment, etc., @ \$ .10 per Bd. ft. . . .	\$100,000.00
LESS 20% lumber salvage . . . . .	20,000.00
<b>TOTAL ESTIMATED COST . . . . .</b>	<b>\$ 80,000.00</b>

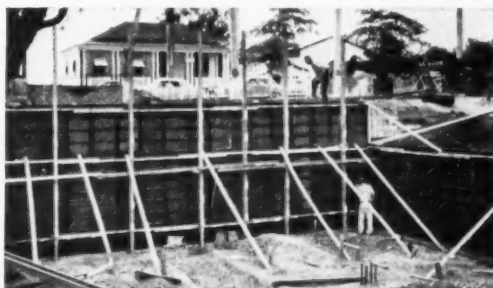
**†UNI-FORM COSTS:**

22,500 sq. ft. of UNI-FORMS . . . . .	\$ 37,256.80
400,000 bd. ft. alignment and bracing lumber actually used . . . . .	40,000.00
<b>SHIPPING UNI-FORMS TO JOB . . . . .</b>	<b>3,800.00</b>
	<b>\$ 81,056.80</b>

Less Contractor's valuation of UNI-FORMS at end of job. 80% . . . . .	\$ 29,805.40
<b>LESS 20% LUMBER SALVAGE . . . . .</b>	<b>8,000.00</b>
<b>TOTAL ACTUAL MATERIAL COST . . . . .</b>	<b>\$ 43,251.40</b>

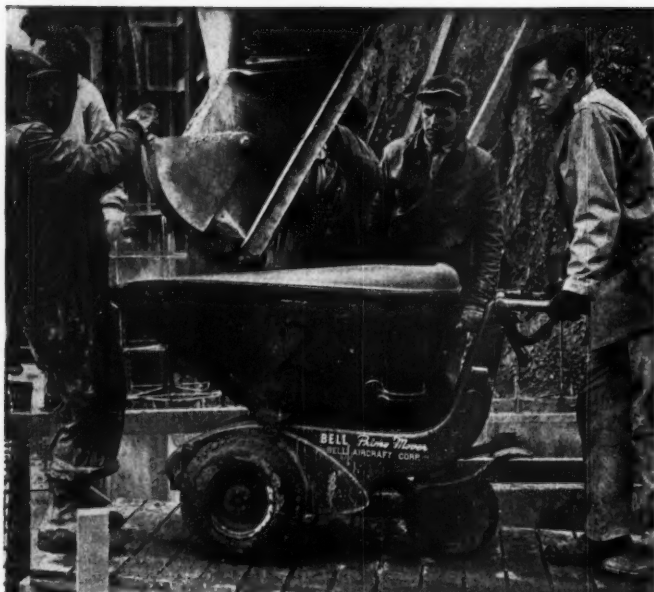


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SAVED 1/2  
ON LABOR, TOO!**



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*Form Clamp Company*  
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The Prime Mover multiplies one man into four. Compactness allows accessibility into close quarters, from basement to top floor.



**IF YOU HAVE  
BOTTLENECKS**

## THE PRIME-MOVER BRINGS QUICK RELIEF



Bucket holds 1000 lbs. of wet or dry material

Climbs 20% grades fully loaded

Dumps mechanically, by foot pedal

Turns in own length 63½", width 31½"

Runs 8 hours on 3 gal. of gas

You simply start the engine on a Prime-Mover and it goes into action fast. Contractors have discovered that one man and a Prime-Mover can greatly assist in breaking troublesome construction bottlenecks. This machine is especially fitted for handling wet concrete, bagged cement, earth, sand, gravel, and rubbish, too. And all day long the Prime-Mover carries full capacity loads—with a saving to you in money and men. (In money, as high as \$35 a day—in men, reduced fatigue and fewer needed.)

**THE PRIME-MOVER CO., MUSCATINE, IOWA**

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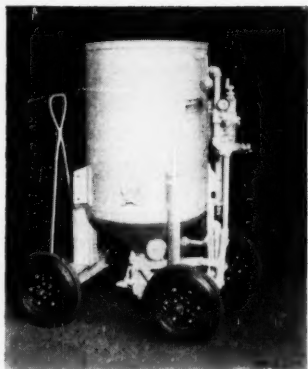
YOUR NAME .....

FIRM NAME .....

CITY .....

STATE .....

**CENTRIFUGAL PUMPS**—Design of the Motor-Mount centrifugal pumps permits use with any motor having an NEMA Type-C mounting flange. They are made in vertical and horizontal types, each type made in 25 standard sizes. Specifications are: Capacities to 200 gpm; heads to 165 ft; motors, ¼ to 7½ hp; speeds, 1,750 and 3,500 rpm; maximum total pressure, 125 lb; maximum suction pressure, 50 lb; maximum recommended liquid temperature, 200 deg F.—The Deming Co., Salem, Ohio.



**SAND-BLAST GENERATOR**—Especially adaptable to bridge-maintenance work, the Ruemelin sand-blast generator has a high-speed blast nozzle which quickly removes rust, scale, and old paint. The generator is mounted on four pneumatic-tired wheels with front wheels on swivel axle. Maximum capacity is 1,000 lb.—Ruemelin Mfg. Co., 3860 N. Palmer, Milwaukee, Wis.

**HYDRO-THROTTLE CONTROL** — Truck-engine throttle control automatically regulates speed of engine when operating equipment from a power take-off. As pressure from power source increases, piston on the control is forced into action to speed engine to the proper rpm. As load is stopped or pressure reduced, throttle instantly and automatically returns engine to idling speed, eliminating unnecessary racing of the engine.—Stratton Equipment Co., Hanna Bldg., Cleveland 5, Ohio.

**DRY-WALL PRIMER-SEALER** — Pigmented wall primer-sealer is recommended for painting dry-wall construction. Designed for interior walls of plaster and masonry or composition wallboard, it seals porous surfaces in one application. It provides firm adhesion and controlled penetration making a single coat of sealer sufficient for even highly porous surfaces. It permits deep-tone flat colors without cloudiness or the appearance of shiners over patched joints.—Devoe & Reynolds, Inc., Home Decorating Institute, Room 1025, 420 Lexington, New York 17, N. Y.

# GREAT NEW ADVANTAGES IN TRUCK MIXERS

**achieved with Chrysler Industrial Engines  
and Chrysler *gyrol* Fluid Drive**

Reverse rotation of the drum without throwing damaging shocks and impacts into the transmission, engine and other parts of the machine!

No shear pins to replace! Smoother operation! Lower maintenance costs! Longer life! These are only a few of the advantages Chrysler Industrial Engines with gyrol Fluid Drive have brought to operation of truck mixers.

In addition, Chrysler Fluid Coupling prevents engine stalling, reduces clutch wear, eliminates jolts and gear rattle, simplifies starting from standstill with excessive load, gives gradual oil-smooth acceleration—opens a whole new field of improved operation for gasoline-powered equipment. See your Chrysler Industrial Engine Dealer or write us. **Industrial Engine Division, Chrysler Corporation, Detroit 31, Michigan.**

**Chrysler gyrol Fluid Drive Now Available  
For Truck Mixers From These Manufacturers**

Blaw-Knox Division  
of Blaw-Knox Company  
Chain Belt Company

Jaeger Machine  
Company  
T. L. Smith Company

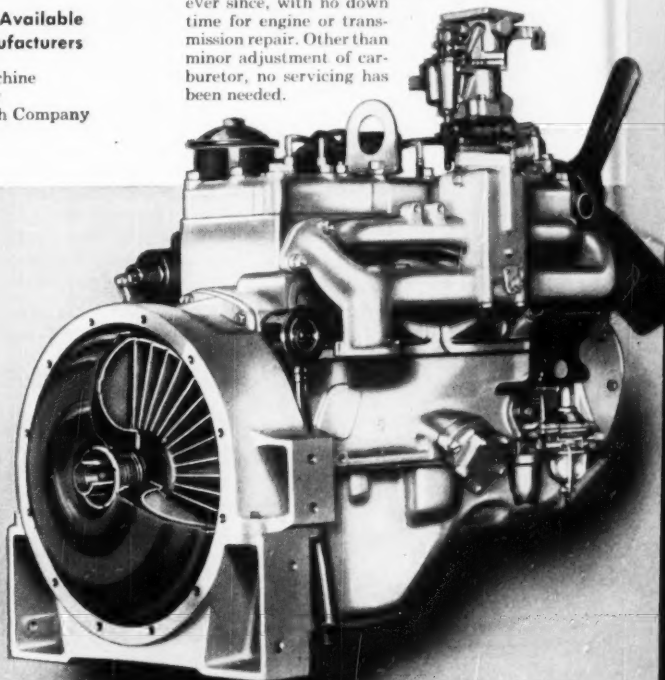
Chrysler gyrol Fluid Drive is built integral with Chrysler Industrial Engines. Its cost is only a few dollars more than the conventional flywheel which it replaces.

**CHRYSLER**  
**Industrial Engines  
and Power Units**

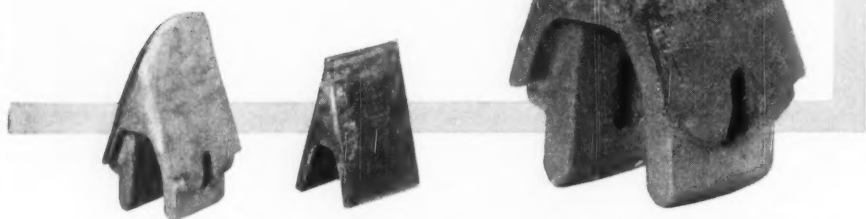


**A Typical Experience**

Five years ago, a Rex Moto-Mixer equipped with Chrysler Industrial Engine and gyrol Fluid Drive was placed in operation by the Tews Lime and Cement Company of Milwaukee. The unit has been operated continuously ever since, with no down time for engine or transmission repair. Other than minor adjustment of carburetor, no servicing has been needed.

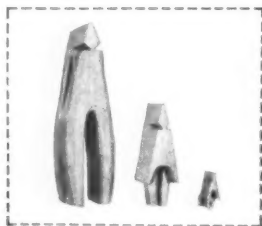


*the fast,  
low-cost way  
to get  
worn teeth  
back in service!*



1. Worn tooth . . . 2. Plus AMSCO Tooth Repointer . . . 3. Equals like-new tooth—ready for service!

## AMSCO® tooth repointers



AMSCO Repointer Bars

3 teeth partially rebuilt with AMSCO Repointer Bars to show sectional view of welding method. These Repointer, or Wedge Bars, are also made in many shapes and sizes. Apply AMSCO Economy Hardface to the rebuilt tooth—for as much as 3 times longer service!

● Here's a typical example of a badly worn dipper tooth completely restored to service . . . simply by welding on the AMSCO Cast-To-Size Tooth Repointer. The result is like-new service life and efficiency, plus a long-wearing tooth of Manganese Steel—the steel that actually work-hardens in service. Cost? *Far less than replacement!*

Wherever equipment has teeth that wear, more and more owners are using money-saving AMSCO Tooth Repointers . . . available in a wide variety of styles and sizes.

Get all the facts! Write today for Bulletin W-10-A  
—showing complete instructions for use.

*put LIFE into service with*



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**MAGNETIC CLUTCH**—Controllable coupling transmits torque by utilizing link action of a dry magnetic mixture in a magnetic field between driving and driven parts. Magnetic mixture is composed of iron particles and flake graphite; the magnetic field is established by current flowing through a coil. Advantages include: Small control power with extremely fast response; no wear on torque-transmitting surfaces; torque at zero slip; large maximum-to-minimum torque ratio; and easy adaptation to remote control.—**Vickers Electric Div., Vickers, Inc., 1815 Locust St., St. Louis, Mo.**



**SMALLER-SIZE TOURNAIDOZER**—Super D Tornado dozer is 3,500-lb lighter and has a smaller capacity bowl than the Super C. It is powered by a 122-hp diesel. Bowl capacity is 2.5 yd. Speeds range to 19 mph. The bowl is cable-controlled. Blade can be raised 44 in. above ground. Attachments available include snow plow, root rake, side-boom crane, Tournaskidder overhead winch, single and double-drum power-control unit, and drawbar for cable-operated scraper.—**R. G. LeTourneau, Inc., Peoria, Ill.**

**HOT-WATER HEATING SYSTEM**—All-copper hot-water heating system features new-type radiators that have individual small blowers with both thermostatic and manual control. Circulating pump, attached to gas or oil-fired boiler, pushes hot water through 3/4-in. copper tubing at a 10 fps speed. Wallrads are located at floor level so that blowers direct heat across the floor. Each Wallrad has its individual rheostat to permit independent control of heat in any room.—**Copperheat Industries, Inc., 20212 Livernois, Detroit 21, Mich.**

**LIGHTWEIGHT DIESEL ENGINE**—Six-cylinder 2-cycle 275-hp diesel engine features compactness and light weight. The Model 110 (110 cu in. displacement per cylinder) embodies the same principles as GM's 71 Series. The 110 is offered as: Bare engine; with full equipment for marine or industrial use; or with special accessory arrangements for a variety of end products.—**Detroit Diesel Engine Div., General Motors Corp., 13400 W. Outer Drive, Detroit 28, Mich.**

..... *Perfect Balance!*



**STERLING 5-12**  
(above) Sturdy wood-handle barrow for dry materials. 3 1/2 cu. ft. capacity.

**STERLING 5-19**  
(right) Ideal for concrete, mortar, etc. 5 cu. ft. capacity.

Available with a 12-spoke steel wheel, pneumatic-tired wheel or zero pressure cushion-type wheel.



Sterling Wheelbarrows move quickly and easily because of their perfectly balanced construction. Actually 80% of the load is on the wheel . . . only 20% on the operator. That certainly lightens the load for fast, easy wheeling.

Wood handles are longer, formed to fit the operator's hands. Steel channel legs and reinforcements are designed for maximum leg clearance. Write for new Wheelbarrow Catalog No. 61.

STERLING WHEELBARROW CO., Milwaukee 14, Wis.



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STERLING Quality

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SYSTEMS  
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PUMPS**

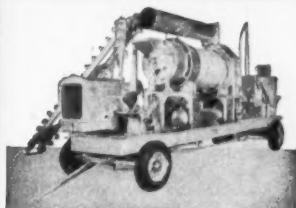
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PLANTS**

Complete units for pavement maintenance. Capacities—4, 8, 12, 25 tons per hour.

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## OWEN BUCKETS

for  
Maneuverability

Maximum  
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Capacity  
Loads

Rapid  
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Discharge



*"A mouthful  
at every bite."*

Buckets  
AND Grapples

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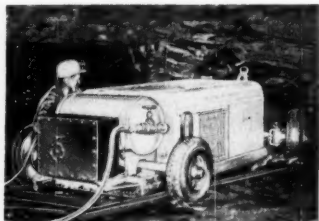
4020 Breakwater Avenue • Cleveland, Ohio

Branches: New York; Philadelphia; Chicago; Berkeley, Calif.



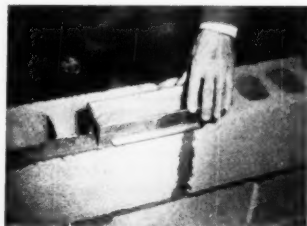
### HEAVY-DUTY SEMI-TRAILERS —

The Armstrong heavy-duty semi-trailers are available in capacities to 40 tons. Features include: Spring-mounted axle, safe, efficient loading by skids and stools supplied with the trailer, standard fifth-wheel mounting, standard wheel alignment, 8-ft bed width, and all models completely wired to meet highway lighting requirements.—**J. D. Armstrong Heavy Hauling, Inc., Box 307, Ames, Iowa.**



### TUNNEL AIR COMPRESSOR—

Low over-all height is feature of the new Davey compressors. Units are available in four standard two-stage sizes to deliver 105, 160, 210, and 315 cfm at 100-lb pressure. Each is available in self-propelled or towable design. Heights of the four models are 32 in. for the 105; 33 for the 160 and 210; and 37 for the 315. Standard compressors are available with pneumatic tires and automotive steering. Design permits 30-deg. turns.—**Davey Compressor Co., Kent, Ohio.**



### APPLICATOR FOR BRICK MORTAR—

Tool is designed to simplify application of mortar in laying brick or concrete walls. Tool sets on the wall, is filled with mortar, and then drawn over the surface needing mortar. As tool is drawn over the surface, it automatically spreads mortar in an even, neat manner. A guide on the tool keeps mortar from falling over bricks. An adjustable gate controls thickness of mortar.—**Kantar & Kester, Curwensville, Pa.**

## NEW EQUIPMENT BRIEFS

**Welding gloves** in three new styles are available from Air Reduction Sales Co., Inc., New York 17, N. Y.

**Rubber-base underlayment** is said to provide fast installation and durable floors. La-Jax (Ajax Floor Products Corp., New York 19, N. Y.) contains no asphalt.

**Replacement pistons** for heavy-duty gasoline and diesel engines are made of Vanasil vanadium-silicon alloy. The Micro-X pistons feature light weight and low-expansion characteristics. Manufactured by: Gillett & Eaton, Inc., Lake City, Minn.

**Tensilend electrodes** eliminate pre-heating, even when welding is below-freezing temperatures. Produced by: Arcos Corp., Philadelphia 43, Pa.

**Cleaning solution** for safety goggles, respirators, and helmets combines the properties of a germicide and detergent. The No. 101 solution is available in 2-oz. bottles or gallon containers. Available from: American Optical Co., Southbridge, Mass.

**Tuf-Cote coating** for safety lenses is now distributed by the Bausch & Lomb Optical Co., Rochester 2, N. Y. Tuf-Cote makes lenses more resistant to welding splatter and emery pitting.

**Fuel pump** for diesel engines is 65% lighter and 56% smaller in size than previous models used. Manufactured by: Cummins Engine Co., Inc., Columbus, Ind.

**Metal parts washers** range in capacity from a 5-gal unit to a 75-gal unit that can accommodate an engine block. Feature of the King unit is violent agitation of solvent set up by an impeller. Manufactured by: The Electric Heat Control Co., Cleveland 5, Ohio.

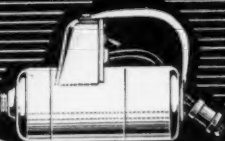
**Fire-protection system** has a photo-electric unit which "sees" fire, and is not dependent on heat, smoke, or other indications. Manufactured by: Fireye Corp., Cambridge 42, Mass.

**Pull-in elbow** is available for running conduit around sharp corners without forcing or damaging the wires. Manufactured by: Gedney Electric Co., New York, N. Y.

**Arc-welding electrode** (W-52—AWS Class E7010) is specifically designed for high-quality welding of low-alloy high-tensile steels, such as pipe lines,

(Continued on page 146)

# VIBER VIBRATORS



## Selected

to reduce time  
and increase profits  
on all  
**CONCRETE CONSTRUCTION**  
*through*  
**INTERCHANGEABILITY**  
**VERSATILITY**  
**DEPENDABILITY**  
on the job



## VIBER COMPANY

Concrete Vibrators Since 1931

Dept. 19, 726 South Flower Street • Burbank, California



The

## LIQUID LIFTER

for speedy and efficient  
hand-pumping

The new LIQUID LIFTER is a low-cost, hand-operated barrel-type pump. It is a light-weight, portable, compact unit, built to meet the general requirements of factories and all-around applications of farms, refineries, petroleum depots, railroads, chemical plants, aviation and marine docks, and outdoor construction machinery. May be used with light or heavy liquids such as oil, gasoline, kerosene, and toluene—has a capacity of 10 gallons per 120 revolutions. Write for folder giving detailed specifications.

**LEAR-ROMEC**

A division of Lear, Inc. at Elyria, Ohio



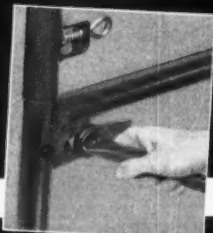
## Can you erect your SCAFFOLDS

### AS EASILY AS THIS?

The two illustrations show how quickly and easily you can attach braces to panels by means of the ADVANCE patented, self-contained Cam Lock. The braces function over every angle to a complete 360° and provide a solid scaffold free from sway.

ADVANCE tubular steel scaffolds also feature the exclusive, self-contained stack lock for positively locking each panel tier to the one below. Compare ADVANCE with other scaffolds before you buy. Write for literature and name of your local jobber.

**BEAVER ART METAL CORP.**  
1204 Factory Ave. Ellwood City, Pa.



**STEP 1**—Hold cam lever in horizontal position and slide into panel socket



**STEP 2**—Turn cam lever down and brace is securely locked to panel

Makers of:

**ADVANCE**

Steel Scaffolds

(Continued from page 145)

in all positions. Produced by: General Electric Co., Schenectady 5, N. Y.

**Plates for welding helmets and shields** filter out ultra-violet and infra-red rays. G-S plates are available in 2x4¼ and 2x4½-in. sizes. Produced by: General Scientific Equipment Co., Philadelphia 2, Pa.

**All-purpose electrode** cuts, pierces, gouges, chamfers, or removes welds without oxygen or special equipment. Feature is heat-resistant coating that concentrates arc at the tip. Maker: All-State Welding Alloys Co., Inc., White Plains, N. Y.

**Waterproof paper** consists of continuous glass fibers swirled between two plies of kraft paper. Glas-Kraft can be used as a vapor barrier, side-wall sheathing, protective floor covering, over subfill, and for curing concrete. Manufactured by: Glas-Kraft, Inc., Lonsdale, R. I.

**Mildew-inhibiting agent**, added during the production stage, is said to prevent deterioration and rotting of V-belts due to this cause. The inhibitor is used in all of the Good-year Tire & Rubber Co.'s belts.

**Reduction pulley** is a speed reducer built inside a V-belt pulley. The planetary gears used provide built-in reductions from 4.7:1 to 36.5:1. Manufactured by: Hart Reduction Pulley Co., Milwaukee 3, Wis.

**Cork-faced bulletin board** has an over-all size of 27x40 in. It has a hardwood frame. Manufactured by: Industrial Products Co., Philadelphia 33, Pa.

**Wax coating** protects metal surfaces against rust and corrosion. It is applied by dip, brush, wipe, or spray methods. Manufactured by: S. C. Johnson & Son, Inc., Racine, Wis.

**Welding products** announced by The Lincoln Electric Co., Cleveland 1, Ohio, include a new welding cable, an insulated electrode holder, and a mild-steel E6012 electrode (Fleet-weld 72). The cable features long life and maximum flexibility. The holder combines the advantages of both tong and hole-type holders. The electrode is recommended for high-speed production of single-pass fillet and lap welds in the flat or horizontal positions.

**Electric-generating plant** delivers 400 watts at 60 cycles, and operates for five hours on 1 gallon of gasoline. Manufactured by: D. W. Onan & Sons, Inc., Minneapolis, Minn.

**Puller** is designed for removing the pre-combustion cup from all Inter-

national Harvester diesel engines. Guide collars prevent removal of forcing screw. Manufactured by: Owatonna Tool Co., Owatonna, Minn.

**Socket wrench set** (1/2-in. square drive) has been redesigned to provide greater working efficiency and stylized appearance. Manufactured by: Snap-on Tools Corp., Kenosha, Wis.

**Fire extinguisher** of the soda-acid type features removable discharge elbow, extra-dimensional inner screen with more non-clogging surface, and 500-lb-test seamless shell. Manufactured by: Stop-Fire, Inc., Brooklyn 1, N. Y.

**Fractional-horsepower motor** combines in one unit a Varidrive that permits instant change of speed in a ratio of 1:10, and a heavy-duty Syncrogear for increasing torque. Available in 1/3, 1/2, and 3/4-hp sizes. Manufactured by: U. S. Electrical Motors, Inc., Los Angeles 54, Calif.

**Concrete vibrators** are now available with a lightweight 2-hp gasoline engine. The MRSB 45 and 55 vibrators have 1 3/4- and 2 3/16-in. heads. The regular 41 1/2-hp engine is still available. These vibrators are part of the line manufactured by: Vibro-Plus Products, Inc., Woodside, L. I., N. Y.

it's a  
"two-bagger"



A name that has only one meaning in baseball could have several meanings in a concrete mixer.

That's why the construction industry quit talking generalities and agreed on exact, uniform standards for measuring mixer and paver capacities. These rigid standards are guaranteed and maintained by AGC Rating Plates.



The AGC Rating Plate is your protection. Contractors, architects and engineers look for it. Always look for it on any mixer or paver when you buy.

## Mixer Manufacturers Bureau

Affiliated with the Associated General Contractors of America, Inc.

CHAIN BELT COMPANY  
Milwaukee, Wis.

CONSTRUCTION MACHINERY CO.  
Waterloo, Iowa

THE FOOTE CO., INC.  
Nunda, N. Y.

THE JAEGER MACHINE CO.  
Columbus, Ohio

THE KNICKERBOCKER CO.  
Jackson, Mich.

KOEHRING COMPANY  
Milwaukee, Wis.

KWIK-MIX COMPANY  
Port Washington, Wis.

THE T. L. SMITH COMPANY  
Milwaukee, Wis.

WORTHINGTON PUMP & MACHINERY CORP.,  
Ransome Division, Dunellen, N. J.



# FOR EXTRA PULLING POWER..



## VULCAN PILE EXTRACTORS



With Vulcan on the job, you've got all the extra pile pulling power you'll ever need in one dependable machine. All claims made for the efficiency, ruggedness and speed of this great pile extractor have been proved again and again through two decades of heavy duty service all over America.

The Vulcan is a simple machine with only one moving part. It's easy to operate and it can't get out of order. Designed specifically for pulling sheet steel, wood, concrete, H-beams and pipe pile, Vulcan comes in three sizes—No. 200 for smaller work.

No. 400 for heavier jobs and No. 800 for pulling the longest, toughest piles. Write for complete details.

## VULCAN IRON WORKS

Since 1852  
331 North Bell Avenue



Chicago 12 --- Illinois

DESIGNED RIGHT . . . BUILT RIGHT FOR

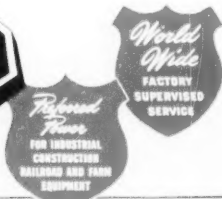
# Long Life

AND TOP PERFORMANCE



The sure way to get the best in air-cooled power — insist on Briggs & Stratton, the recognized leader. No other single-cylinder, 4-cycle, air-cooled engines are so universally preferred by manufacturers, dealers, and users alike. This is proved by the fact that there are more Briggs & Stratton engines in service — on farm equipment, industrial machines, tools, and appliances — than all other makes of gasoline engines in their field combined.

BRIGGS & STRATTON CORPORATION, Milwaukee 1, Wis., U. S. A.



In the automotive field Briggs & Stratton is the recognized leader and world's largest producer of locks, keys and related equipment.

## New PUBLICATIONS From MANUFACTURERS

The catalogs and bulletins reviewed below will keep you posted on latest developments in construction equipment and materials available for your use

**CONCRETE RIVER WEIGHTS.**—Illustrated brochures describe the Universal concrete river weights. The first publication shows photos of actual use of weights to safeguard gas lines crossing the Tennessee River. Engineering specifications are listed. The second publication, a 12-p booklet, shows how precast concrete cribbing and bridge deck slabs combine to speed bridge construction and repair.—**Universal Concrete Pipe Co.**, 297 S. High St., Columbus, Ohio.

**RUBBER PRODUCTS.**—Three new bulletins describe Hewitt-Rubber products. Bulletin 137 describes the Servall all-service hose for handling air, water, gasoline, oil, or mild chemicals for low-pressure spray requirements. Bulletin 129 describes the general-service Conservo air hose. Bulletin H-1 (8 pp) describes applications and comparative qualities of flexible rubber pipe.—**Hewitt-Robins, Inc.**, Hewitt-Rubber Div., 240 Kensington Ave., Buffalo 5, N. Y.

**CONCRETE MIXERS.**—Two catalogs are announced by Worthington. Bulletin R-217A describes the Worthington-Ransome Blue Brute 11-S and 16-S concrete mixers. Bulletin B-1700-B2 describes all current models of Worthington-Ransome Blue Brute big concrete mixers. Both bulletins are replete with details and photographs of these mixers in use. Attachments and accessories are also described.—**Worthington Pump & Machinery Corp.**, Ransome Construction Equipment Sales Div., Dunellen, N. J.

**FORMING SYSTEM.**—Booklet (8 pp) describes and illustrates latest development in Symons concrete-forming system. This consists of brace plates which can be furnished for use on 2x4 braces and later used as horizontal supports on scaffolds. Another innovation is a panel with steel cross-members which is recommended to take care of heavy pouring, especially when a vibrator is used. Each of these and other features are described in this comprehensive booklet.—**Symons Clamp & Mfg. Co.**, 4255 W. Diversey Ave., Chicago 39, Ill.

# 3 CLYDE *Portable Builders* TOWERS

## SAVE 3 WAYS

### ON THIS CONSTRUCTION JOB!



RIGIDLY BRACED 10 FT. SECTIONS ARE BOLTED INTO PLACE ON THE GROUND!

ELEVATOR PLATFORM OR 1/2 YARD CONCRETE BUCKET SAFELY RIDES THIS TOWER AT SPEEDS UP TO 178 FT. PER MINUTE.

1

**SAVE TIME**—Clyde Towers are easily assembled on the ground, cable reeved and tower erected by its own hoist. *Clyde towers 100 feet high are self-raising.*

2

**SAVE LABOR**—Truck it to the site in the morning! Have it in operation before noon! Hoist loads up to 2500 lbs. at speeds up to 178 f.p.m. with elevator platform or concrete hopper bucket.

3

**SAVE MONEY**—Clyde Towers eliminate the replacement cost of tower timbers and may be transported to a new site and erected at a fraction of timber tower costs.

#### PUT UP A CLYDE TO LOWER YOUR COSTS!

Clyde Portable Builders Towers are up and in operation with but a few man hours of time! And once the Clyde is on the job, it's like having an additional crew at work.

Elevator platform carries two concrete buggies or two wheelbarrows. Safety brake is available to hold load in case of cable failure. If you are pouring concrete, the half yard hopper bucket rides the tower smoothly, swiftly, *safely!* A one ton capacity tower derrick can save you additional time and money by hoisting timbers, structural steel, etc.

When you investigate the many money saving, *profit making* features of Clyde Portable Builders Towers you will know that material handling costs come down and profits rise just as soon as a Clyde is put in operation on your construction work.

#### SIMPLE, EASY TO ERECT OR DISMANTLE

Tower is transported by truck or towed on trailer wheels which attach to tower base.

Assemble tower on the ground, thus eliminating accident hazards.

Tower is raised with its own hoist. No cranes or gin poles are needed.



WRITE TODAY FOR COMPLETE INFORMATION



HOISTS • DERRICKS • WHIRLEYS • BUILDERS TOWERS • CAR PULLERS • HAND-CRANES • ROLLERS

## CLYDE IRON WORKS, Inc.

D U L U T H , M I N N E S O T A

SUBSIDIARY OF BARIUM STEEL CORPORATION

# MONEY MAKER

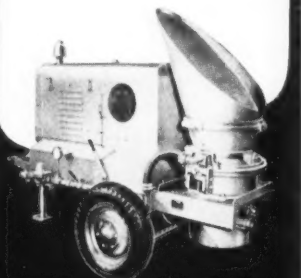


**JETCRETE  
GUN**

● **SHOOTS STRONGEST  
CONCRETE FASTER**

"Welding with Concrete" best describes the new CMC JETCRETE method of pneumatically applying concrete. JETCRETE is the most nearly perfect concrete known today. Wherever and whenever used, JETCRETE has done the job better, faster—and at lower cost! The machine with a thousand uses!

- **BUILDING** . . . walls, roofs, partitions, fences, fire retards, etc.
- **REPAIRING** . . . Disintegration of all kinds—old buildings, bridges, stacks, bunkers, dams, etc.
- **WATERPROOFING** . . . Reservoirs, tunnels, tanks, drains, fissures, water basins, etc.
- **FIREPROOFING** . . . Wood structural steel . . . buildings and mines, etc.
- **PRESERVING** . . . Brick, concrete, steel, tile, stucco, wood, iron, spill ways, turbine chambers, piers, sewers, tunnels, etc.



Write for illustrated bulletin No. JG-348 showing JETCRETE in action.  
**CONSTRUCTION MACHINERY  
COMPANIES  
WATERLOO, IOWA**

**DIESEL OIL**—Circular on D-A diesel oil describes how and why this product reduces engine deposits and neutralizes destructive combustion chamber acids. A table of recommendations lists grades of oil to use with tractors, trucks, power units, and passenger cars under various temperature conditions.—**D-A Lubricant Co., Inc., Indianapolis, Ind.**

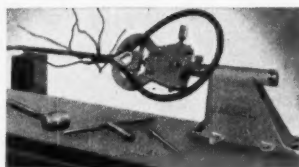
**UNDERFLOOR DUCT SYSTEM**—Booklet 18-120 UF describes in detail the most expedient manner for laying out and estimating Fiberduct underfloor distribution systems. It contains pertinent information on where and how to use Fiberduct, how to lay out a duct system, how to make a materials take-off, and installation procedure. Handy formulas and step-by-step procedures for estimating and figuring materials simplify calculations.—**General Electric Co., Construction Materials Dept. News Bureau, Bridgeport 2, Conn.**

**CLEAR WOOD PRESERVATIVE**—Decaznot, a clear wood preservative, is featured in Catalog 501-WP. Also included in this catalog is information on C-4 black creosote; Coopersote brown creosote oil; Puresote, a light-brown extra-quality creosote; clear creosote shingle stain; black tree wound paint; and Exterm termite destroyer. The bulletin describes each product, lists its recommended uses, and describes methods of application.—**Coopers Creek Chemical Corp., West Conshohocken, Pa.**

**STAINLESS-STEEL CURTAIN WALLS**—Armco Stainless Steelox—what it offers and how it is used in curtain walls is described in an illustrated 12-p booklet. Explaining basic functional design of curtain walls, the booklet lists 13 architectural advantages claimed for Steelox panel construction. Eight pages of sketches show how Steelox can be used as either vertical or horizontal units and to provide varied exterior treatments. Sketches show details of sections at masonry walls, wall bases, windows, and plan views of spandrel and strut construction.—**Armco Drainage & Metal Products, Inc., Middletown, Ohio.**

**TORQUE-CONVERTER TRACTOR**—Features of the HD-19 crawler tractor with torque-converter drive are explained in this 24-p catalog. The catalog contains a precise, complete, and simple discussion of the torque-converter drive. One full page is devoted to operators and servicemen. A 2-p spread introduces a full line of allied equipment for the HD-19. Another page is devoted to special accessories.—**Allis-Chalmers Mfg. Co., Tractor Div., Box 512, Milwaukee 1, Wis.**

## WIRE ROPE SPLICER



Time-Tested in Naval and Aircraft Use.

Swivel Acting Jaws—Torque Control mean savings in Splicing Man-Hours—up to Fifty Percent.

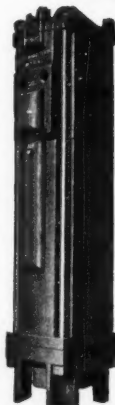
Send for Illustrated Folder giving step by step story on How to Splice with this unique machine.

## QUAY INDUSTRIES

100 Barr Building  
Washington 6, D. C.

(In Canada—Canada Wire and Cable Co., Toronto)

## McKIERNAN-TERRY Job-Proven PILE HAMMERS



McKiernan-Terry Pile Hammers are job-proved and time-tested . . . the choice of engineers and contractors on major construction projects throughout the world. Available in a standardized line of 10 double-acting hammers, 5 single-acting hammers and 2 double-acting extractors. Write for free Bulletin.

Also builders of coal and ore bridges, bulk material unloaders, bridge operating mechanisms, hoists and marine equipment, and specially designed machinery.

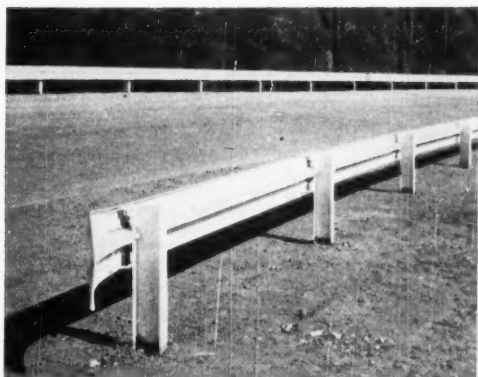
**McKIERNAN-TERRY  
CORPORATION**

MANUFACTURING ENGINEERS  
14 PARK ROW, NEW YORK 7, N. Y.

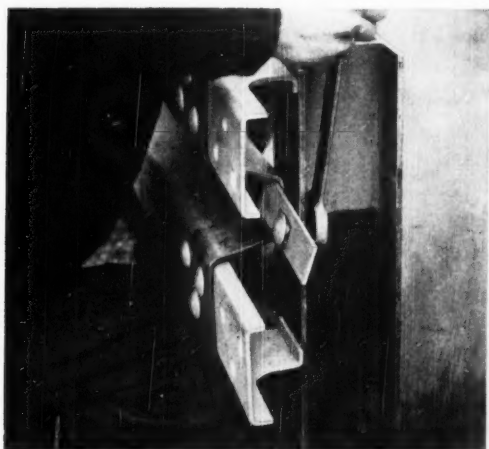


Painted a gleaming white, Safety-Beam stands out boldly against Vermont's rolling hills.

## FOR THAT **EXTRA** MARGIN OF SAFETY USE *Safety-Beam*



Rear and front views of Safety-Beam on highway in Pennsylvania.



Safety-Beam is easy to install, as it fastens to post with one bolt.

To be sure of extra protection for motorists at such dangerous highway locations as bridge approaches, sharp turns and embankments, use Bethlehem Safety-Beam Guard Rail.

### ABSORBS IMPACT

Two features make Bethlehem Safety-Beam Guard Rail ideal wherever extra protection is required: (1) great strength, and (2) ability to absorb impact. This husky rail consists of strong sections of steel plates, bolted together securely to form a continuous, impact-absorbing beam. When vehicles strike Safety-Beam, impact is distributed along the rail, making it next to impossible to crash through the rail and off the shoulders. In most cases, runaway vehicles are deflected parallel to the rail.

### EASY TO INSTALL

Safety-Beam Guard Rail means real economy, because it can be installed quickly, even by unskilled labor. It fastens to the post with one bolt. There's no need for end anchor rods, special tools or complicated adjustments. Safety-Beam is easily visible too, even at night. It is regularly furnished in 12 ft. 6 in. lengths, and in longer lengths for special requirements.

Folder 545 includes standard details and assembly plans for Bethlehem Safety-Beam Guard Rail. The nearest Bethlehem sales office will be glad to supply a copy. Or send your request to us at Bethlehem, Pa.

### BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

*On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. Export Distributor: Bethlehem Steel Export Corporation.*

## STEEL FOR HIGHWAYS

Dowel Units • Reinforcing Bars • Guard Rail Posts  
Bar Mats • Guard Rail • Wire Rope and Strand  
Hollow Drill Steel • Spikes • Bolts and Nuts • Pipe  
Sheet- and H-Piling • Fabricated Structural Steel  
Timber Bridge Hardware • Tie-Rods



# CONCRETE MIXING and POURING ON THE JOB!



Shown here ready for travel.  
A Complete Mobile Concrete Mixing  
Unit and Elevator.



## GREATER PROFIT ON EVERY JOB!

**THE ONE-YARD MIXERMOBILE  
GIVES:** Complete mobility . . . more  
jobs covered per day! One complete

unit means more economy on every job. It saves the cost of hauling and erecting a tower. It saves the cost of hoist and storage hopper because these are included with the attached tower. It saves through the use of dump trucks . . . concrete is mixed on the job (with specially designed scale batch aggregates can be weighed for actual weight mixing).

### READY MIX ECONOMY WITH MIXERMOBILE.

Use the Mixermobile as a portable elevating and agitating storage plant for ready mix concrete. With storage capacity of 4½ cubic yards, Mixermobile eliminates costly stand-by time of ready mix trucks. One man handles the complete operation, both mixing and elevating. Save time, labor with Mixermobile.

**Turns Out 200 Cubic Yards of Concrete Per Day**

**FEATURES INCLUDE:** Hydraulic Controls; Discharge Timer; Fool-Proof Water Control System.

**WRITE TODAY FOR LITERATURE AND YOUR NEAREST DEALER**



We reserve the right to make improvements in design and specifications without notice.

## MIXERMOBILE MANUFACTURERS



Box 7527



Portland 20, Oregon



**FORM ENGINEERING**—Complete data on a line of concrete-form equipment are provided in the 1950 edition of "Form Engineering." New items listed for the first time include Hex-Lock clamp, Snap-On spacer clamp, form aligners, and reversible waler supports. This 54-p catalog is complete with photographs and diagrams illustrating the principal features of the Williams equipment. Typical job installations and section details are also illustrated.—**Williams Form Engineering Corp., 1501 Madison Ave., S. E., Grand Rapids 7, Mich.**

**PANEL CONSTRUCTION DATA**—Manual covers Cemesto design and construction application data for building low-cost insulated buildings. Booklet contains 40 pages of detailed drawings, data, and other information. Cemesto board is a structural insulating panel unit consisting of a core of laminated cane-fiber insulating board surfaced on both sides with light gray cement-asbestos boards bonded with moisture-proof, highly vapor-resistant bituminous adhesive.—**The Celotex Corp., 120 S. LaSalle St., Chicago 3, Ill.**

**WIRE ROPE FOR SCRAPERS**—Informative folder lists specific reasons for recommending Streamlined scraper rope. Specifications for this rope are: 6x25 flattened strand; Lay-Set preformed; improved plow steel; Lang lay; and independent wire-rope core. The folder points out definite advantages said to accrue through its use.—**American Chain & Cable Co., Inc., American Cable Div., Wilkes-Barre, Pa.**

### BITUMULS PAVING HANDBOOK

—Pocket-size handbook (80 pp) covers all aspects of paving techniques using Bitumuls emulsified asphalt and other types of bituminous binders. The booklet is divided into five sections: (1) Information on paving methods and materials; (2) specifications on road and airport paving, including base, wearing surface, and seal; (3) complete tabular data on rate of application of asphaltic binders and quantities of aggregate required; (4) condensed Asphalt Institute specifications for asphalt cement and cutbacks, and (5) listing of an engineering library of free booklets covering individual types of construction.—**American Bitumuls Co., 200 Bush St., San Francisco 4, Calif.**

**TUNGSTEN-CARBIDE BITS**—Picture story presented in 20-p catalog shows how to recondition tungsten-carbide bits successfully. The booklet also contains helpful operating suggestions for drillers on how to obtain maximum speed and footage out of carbide bits.—**Rock Bit Sales & Service Co., 2514 E. Cumberland St., Philadelphia 25, Pa.**

#### DIESEL-NOZZLE CLEANING KIT

—Leaflet 614 describes a kit of equipment for cleaning diesel nozzles. Items described in the leaflet include cleaning wires, pin vises, wire brush, bristle brushes, and lapping compounds.—**Bacharach Industrial Instrument Co., 7000 Bennett St., Pittsburgh 8, Pa.**

**I-H TRACTORS**—Catalog A-153-NN (24 pp) describes features of the International TD-14A crawler tractor. It is complete with photographs and sectional views. Form A-154-NN (24 pp) describes the International TD-18A crawler tractor. Produced in two colors, this catalog contains pictures, sectional views, and diagrams fully illustrating features of this tractor.—**International Harvester Co., Industrial Power Div., 180 N. Michigan Ave., Chicago 1, Ill.**

#### WELDING-EQUIPMENT FOLDER

—Up-to-date operating data on line of welding equipment is available in a pocket-size equipment folder. Full design specifications are given for EutecTorch No. 1 and No. 2. The EutecArc double-duty ac arc-welding machine is also covered. Part of the folder is devoted to a complete listing of additional accessories for gas and arc welding.—**Eutectic Welding Alloys Corp., 40 Worth St., New York 13, N. Y.**

#### PORTABLE ELECTRIC TOOLS

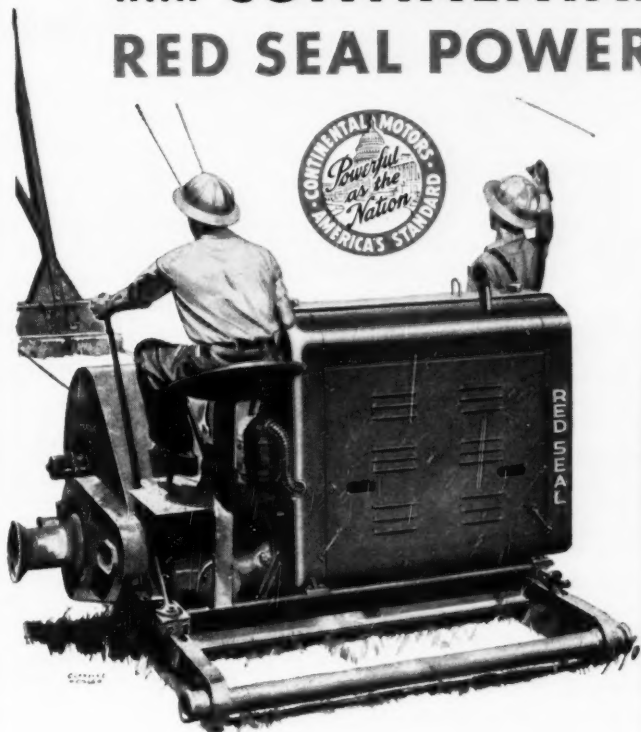
Catalog 50A illustrates and describes complete line of Hi-Power and Zephyr portable electric tools. These tools include drills, hand saws, paint sprayers, paint-brush cleaners, and drill kits. Complete specifications are listed for each unit.—**Portable Electric Tools, Inc., 320 W. 83rd St., Chicago 20, Ill.**

#### BALL-BEARING SWIVELS

Fifteen different types of end connections and 9 swivel capacities ranging from 250- to 46,200-lb working loads are described in this illustrated booklet. All Miller swivels have a safety factor of 5:1. The catalog describes the features of the Miller line including: Turn freely under maximum stress; remove kinking and twisting when line is heavily loaded; and eliminate spinning of load.—**General Machine & Welding Works, Pomona, Calif.**

**ROLL CRUSHERS** — Sixteen-page bulletin describes Pioneer's new line of redesigned and improved twin and triple roll crushers. The bulletin describes and illustrates applications of roll crushers and contains tables and information to enable selection of proper type and size. Dimension and foundation data are included, and a chart shows expectable percentages of various sizes of material. Center spread shows a full cutaway view.—**Pioneer Engineering Works, Inc., 1515 Central Ave., Minneapolis 13, Minn.**

## GOOD EQUIPMENT IS BETTER WITH **CONTINENTAL** **RED SEAL POWER**



In the construction industry, as elsewhere, there's growing recognition that good equipment is better with Continental Red Seal power. One of many reasons WHY it's better is Continental Motors' policy of engineering the power plant expressly for its work. There are Red Seal industrial models from  $\frac{3}{4}$  to 140 horsepower, built to hundreds of different specifications, in a variety of shapes and profiles, with performance characteristics suited to a wide range of jobs. It will pay you, when buying industrial or construction equipment, to choose a make with Red Seal power.

IN PARTNERSHIP WITH AMERICA'S LEADING  
BUILDERS OF POWERED EQUIPMENT

***Continental Motors Corporation***

MUSKEGON, MICHIGAN



## ADVANCE-DESIGN TRUCKS

**POPULARITY LEADERS** Chevrolet trucks are the favorites by far! In every postwar year truck users have bought more Chevrolets than any other make. And that's proof of the owner satisfaction they have earned!

**PERFORMANCE LEADERS** Chevrolet trucks give you high pulling power over a wide range of usable road speeds . . . cut down total trip time with high acceleration on the straightaway.

**PAYLOAD LEADERS** Careful design and rugged construction permit you to haul more goods more miles—at lower cost per ton mile! You enjoy real savings on operating and repair costs.

**PRICE LEADERS** You're money ahead with Chevrolet trucks! Chevrolet's rock-bottom initial cost—outstandingly low cost of operation and upkeep—high-trade-in value, all add up to the lowest price for you.

## Packed with **VALUE . . .** Primed with **POWER**

Chevrolet Advance-Design trucks have everything it takes—and plenty to spare. Rugged construction to withstand the wear and tear. Handling ease and comfort to lighten the load of a day's work. And more power than ever! Two great Valve-in-Head engines—the Loadmaster 105 h.p. and the Thriftmaster 92 h.p.—make these the most powerful trucks Chevrolet has built! Yes, these new jobs bring you peak value—and at a low price. They cost surprisingly little to buy, to run and maintain. That's why Chevrolet trucks outsell them all!

CHEVROLET MOTOR DIVISION, General Motors Corporation, DETROIT 2, MICH.

### AHEAD WITH ALL THESE PLUS VALUES

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**FORMS FOR CONCRETE**—Kenney plastic-faced forms for concrete construction are described in a 4-p folder. Also described are the Type A all-steel forms, and plywood-faced steel forms. Complete information is provided on erection procedures. Feature of the catalog is a listing of 12 reasons for recommending the Kenney forms.—**Consolidated Concrete Form Corp.**, P. O. Box 96, Teaneck, N. J.

**PORTABLE REFRACTION SEISMOGRAPH**—Use of a portable refraction seismograph for determining thickness of overburden and depth to bedrock is described in this 8-p catalog. Each component part of the system is described in detail including the oscillograph, amplifier control unit, seismometers, and cable and reel. The catalog describes the procedure to follow, and shows the results of a typical test.—**Century Geophysical Corp.**, 1333 N. Utica St., Tulsa 10, Okla.

**HOSE COUPLINGS; FITTINGS**—Catalog section (12 pp) describes Goodrich hose couplings and fittings of various types. The catalog section pictures and provides details on each type coupling and fitting, together with specifications, general and maximum pressure recommendations, and a description of threads.—**The B. F. Goodrich Co.**, Akron, Ohio.

**ROPE SPECIFICATIONS CHART**—Reference chart provides specifications on manilla, nylon, and sisal ropes. Data covered include rope diameter, circumference, approximate net weight, approximate gross weight per coil, and breaking and working strength. Data is provided for sizes ranging from 3/16 to 3 3/4 in. in diameter.—**New Bedford Cordage Co.**, New Bedford, Mass.

**SAFETY GOGGLES SELECTOR**—Choosing of proper safety goggles for 69 specific jobs is speeded with compact easy-to-use safety eyewear selector. Job classification numbers refer users to a sliding selection table that lists such occupations as acetylene welders, drillers, platers, riveters and the like. Frames applicable for each task are numbered and illustrated for identification.—**Bausch & Lomb Optical Co.**, 635 St. Paul St., Rochester 2, N. Y.

**WOVEN-WIRE SLINGS**—Specifications for a complete line of woven-wire slings are listed in this catalog. Slings listed are available in standard widths from 3 to 30 in. and from 36 to 132 in. in standard lengths. The catalog points out that special sizes are fabricated on request and lists the various metals and alloys in which the slings are produced.—**The Cambridge Wire Cloth Co.**, Cambridge, Md.

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### CURTAIN-WALL CONSTRUCTION

—Progress report on stainless-steel curtain wall construction is an interim statement of proposed methods in which prefabricated sections of stainless-steel sheathing backed by insulating material replace masonry or other materials in construction of exterior walls of buildings. Although still in a middle development stage, the technique has caused widespread interest. Examples used in this 24-p booklet have been developed over a period of 2 yr. Scale drawings illustrate existing and planned types of stainless-

steel curtain walls with specific attention given to such details as facings, insulation, joints, vents, window sections, and shapes and textures.—**Allegheny Ludlum Steel Corp., 2020 Oliver Bldg., Pittsburgh 22, Pa.**

**ELECTRIC CABLE HOISTS**—Bulletin describes the Bob-Cat heavy-duty electric cable hoists. It is well illustrated with photographs, diagrams, and line drawings, and provides full descriptions, specifications, prices, and ordering data.—**The Ohio Electric Mfg. Co., 5900 Maurice Ave., Cleveland, Ohio.**

## SALES AND PARTS SERVICE

A department devoted to manufacturers' activities involving the sale and distribution of products and parts, and service facilities. Designed to give the reader information that will enable him more readily to purchase products and parts and to service his equipment.

### Distributor Appointments

**Bucyrus-Erie Co.**—Bell-Lott Road Machinery Co., West Columbia, will handle sales and service throughout the state of South Carolina.

**Deister Machine Co.**—Indiana Equipment Co., Indianapolis and Fort Wayne, will handle sales of Deister vibrating screens in all of Indiana except the Calumet area.

**Eriez Mfg. Co.**—Ponsford-Moos Equipment Co., El Paso, is exclusive sales representative in Panama, Costa Rica, Nicaragua, El Salvador, Honduras, and British Honduras.

**Frick Co., Inc.**—Announces appointment of Furnival Machinery Co. of Philadelphia and Harrisburg as dealers for industrial tractors and power units in the eastern part of Pennsylvania, southern New Jersey, and throughout the state of Delaware.

**Gerlinger Carrier Co.**—The Frank Colker Co., Detroit, will handle lower Michigan; Madden Equipment Co., Chicago, the portion of Illinois and Indiana immediately surrounding Chicago; Stowers & Co., Milwaukee, the state of Wisconsin and the upper peninsula area of Michigan; Wiese Planning & Engineering Co., St. Louis, Mo., southern Illinois and eastern Missouri; and Peter P. Wood Co., Indianapolis, the state of Indiana.

**Huber Mfg. Co.**—Overton & Ross, Dallas, Tex.; Overton & Mims, Inc., Wichita Falls, Tex.; and Contractors Machinery Co., San Antonio, Tex.

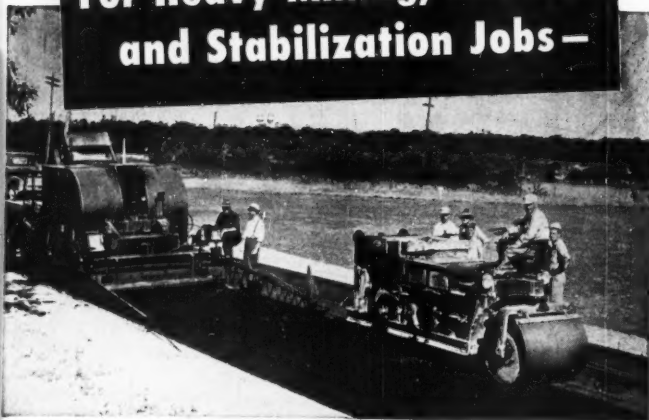
**Hyster Co.**—J. P. Waite, Inc., Milwaukee, is dealer for Hyster materials-handling trucks in eastern Wisconsin and northern Michigan.

**Tube Turns, Inc.**—J. T. Wing & Co., Windsor, Ontario; and Thomas Robertson & Co., Ltd., Montreal.

### New Sales Outlets (Agencies, Branches)

**Air Reduction Sales Co.**—Is appointed national distributor for the  
(Continued on page 159)

## For Heavy Mixing, Retread and Stabilization Jobs—



## The New Heavy-Duty Moto-Paver

Although developed primarily to meet the rugged conditions of hilly and mountainous terrain, the heavy duty Moto-Paver is proving equally efficient under widely differing conditions in other sections of the country.

Wherever you have a heavy bituminous mixing, retread or stabilization job, it will pay you to investigate this new and more powerful Moto-Paver. It does the *complete mixing and laying job—in one continuous operation*. See your local distributor or write direct for specifications and complete information.

The Moto-Paver is a very flexible as well as a mobile unit. The illustration shows it being used as a stationary mixing plant.



**Hetherington & Berner Inc.**

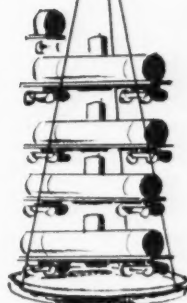
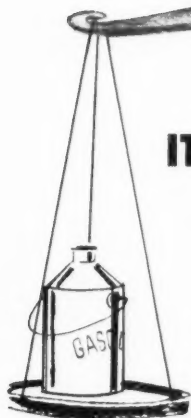
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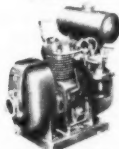
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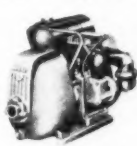
For operating economy, Barnes Automatic Centrifugals are unmatched in anyone's language or for anyone's money. Barnes Self-Priming Centrifugals deliver 33,000 gallons of water for every gallon of gas they burn. That's equal to 4 1/8 railroad tank cars filled to the top and running over. And that is amazing economy! That's economy you can't overlook when considering your pump requirements. You can get them powered with either gasoline or Diesel engines, electric motors, or with pulley pumps for the application of your own existing power service. Ask your dealer for a free demonstration of these better Barnes Pumps. You'll be pleased with what you see.



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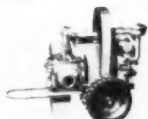
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**H**e checks every piece of mechanical equipment he owns for wear, lubrication, efficiency.

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A Chest X-Ray is the first step toward detecting tuberculosis in its early stages. And in its early stages it can be cured with the least loss of time from work.

So, if you're the man above, that one simple reason should make you get your Chest X-Ray—*today*. But listen, see how serious this really is:

Between the ages of 15 and 34, tuberculosis leads all other diseases as a cause of death—although at no age are you safe from TB. Yet, if everyone does his part by getting a Chest X-Ray periodically, and the majority of cases thus discovered are followed up, we can eliminate TB entirely as a public health hazard!

Will you do your part today? Get a Chest X-Ray. It may mean your life!

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**McGRAW-HILL PUBLICATIONS**

(Continued from page 156)

welding industry of the recently introduced Prepo hand-held torch.

**Industrial Brownhoist Corp.**—Has opened a sales office at 1422 Oliver Bldg., Pittsburgh, Pa.

**Cleco Div., Reed Roller Bit Co.**—Has opened a new factory branch and warehouse at 2832 E. Grand Blvd., Detroit.

**Service Supply Corp.**—New service and sales branch is located at 234 N. Prince St., Lancaster, Pa.

**The S. K. Wellman Co.**—New export office is located at 8 S. Michigan Ave., Chicago, Ill.

#### Sales Personnel

**Allis-Chalmers Mfg. Co.**—Mert M. York is named manager of the Boston district office.

**American Steel & Wire Co.**—Thomas M. Camerden is named Pittsburgh district manager of sales; Paul L. Lindsay succeeds him as manager of the Cincinnati district; M. E. Capouch is named manager of the construction-materials sales division, and E. T. Eggers is manager of wire rope sales division.

**The Black & Decker Mfg. Co.**—Robert A. Brown is upped to sales engineer in the Atlanta territory; Wm. F. Dunn, Jr., is promoted to the same position in the New Orleans territory; and Robert Dawson is sales engineer in the Kansas City area.

**Chain Belt Co.**—William N. Rogers is appointed western Pumcrete representative. His headquarters are at 3838 Santa Fe Ave., Los Angeles.

**Eutectic Welding Alloys Corp.**—F. F. Roehl is national sales manager.

**Federal Motor Truck Co.**—W. H. Hubbell is factory sales representative in the Richmond region.

**Flexible Steel Lacing Co.**—Lester B. Coleman will represent the company in New England and New York State.

**Gardner-Denver Co.**—Clancy O'Dell is field engineer located at 76 Ninth Ave., New York 11, N. Y.

**Goodall Rubber Co.**—Edward Leb. Marshall succeeds O. C. Jacobs (retired) as manager of the Pittsburgh branch.

**Jahn Trailer Div.**—John G. Watson is appointed assistant sales manager.

**Keystone Asphalt Products Co.**—Hiram McCullough is sales representative.  
(Continued on page 160)

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## ON FIELD TESTS IN EVERY TYPE OF PROSPECTING AND STRIPPING THROUGHOUT THE WORLD.

Also available  
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**STANDARD  
ONE-SPEED DRILL**

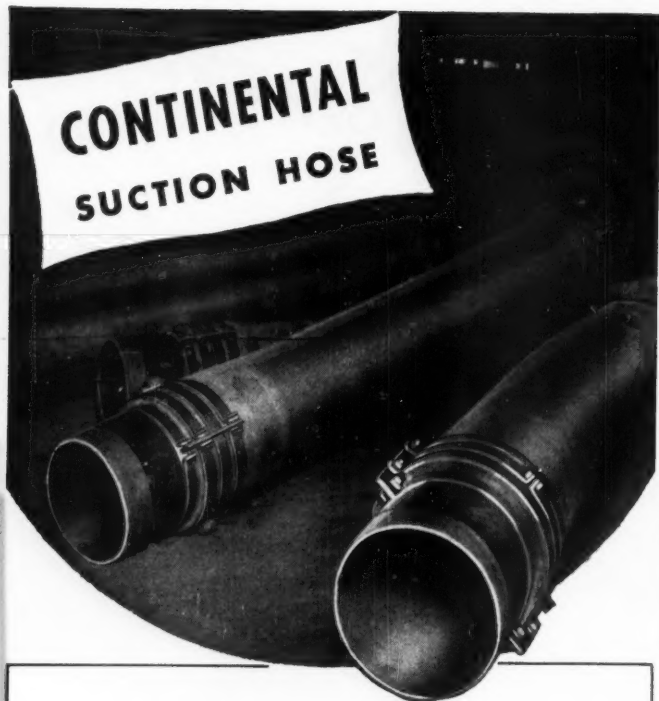


The Parmanco Two-Speed Transmission Drill is designed to meet the requirements of the general prospecting field where it is not necessary to drill in solid limestone. Special sliding frame permits drilling and pulling of augers without moving drill. New design of chuck eliminates all hand operation in raising power plant. Recommended for 50 to 60 feet with six inch equipment and can be used to greater depths with four and one-quarter inch equipment.

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Cincinnati, Ohio	Kansas City, Mo.	New York, N. Y.	San Francisco, Calif.
Cleveland, Ohio	Lancaster, S. C.	Philadelphia, Pa.	Syracuse, N. Y.

(Continued from page 159)  
sentative to cover the Middle Atlantic and New England States; John Forster joins the Chicago office sales staff.

**Koehring Co.**—R. E. Bansemer is assistant general sales manager; R. K. Patterson is moved to the New England sector; C. Byron Walker, the Pacific Northwest; and Al W. Schlosser, the Southeast.

**Smith Engineering Works**—Arnold N. Wigle is direct factory representative for Ohio.

**Timken-Detroit Axle Co.**—James H. Barnes joins the company in the sales engineering department.

**Wooldridge Mfg. Co.**—Douglas Pumpelly is appointed northwest district representative.

**Wood Mfg. Co.**—Chas. R. Hine is appointed general sales manager.

**Worthington Pump & Machinery Corp.**—William A. Meiter fills the newly created position of central sales manager directing sales in Buffalo, Detroit, Cleveland, Cincinnati, and Pittsburgh; John W. Stovall succeeds him as manager of the Buffalo district sales office.

### Ownership Changes

**Pettibone Mulliken Corp.**—Announces acquisition of Hammermills, Inc., St. Louis, as a wholly owned subsidiary.

### New Plants or Offices

**The Baker Mfg. Co.**—New brick and steel assembly plant is being built at a cost of \$150,000.

### Changes of Address

**Albert & Davidson Pipe Corp.**—Has dropped the Albert from its name to become the Davidson Pipe Co., Inc. There is no change in management or policy.

**Chicago Bridge & Iron Co.**—San Francisco sales office is moved to Room 617, 200 Bush St.

**Robins Conveyor Div.**—Cleveland office is moved to 8905 Lake Ave.

**Irvington Form & Tank Corp.**—New York City offices are moved to 20 Vesey St.

**Jahn Trailer Div.**—Sales and executive offices are moved from Savanna, Ill., to 6 N. Michigan Ave., Chicago.

**The Levinson Steel Co.**—Offices are now located at South 20th and Wharton Sts., adjacent to the fabricating plant and warehouses.

**The Warner & Swasey Co.**—Manu-  
(Continued on page 162)

**for faster drilling  
on any location  
at any angle**



Providing fast and easy operation of the more powerful CP Drifter Drills (3½-inch and 4-inch cylinder bore), the medium-weight G-200R WAGON DRILL can be used anywhere — for drilling vertically, horizontally, or at any angle.

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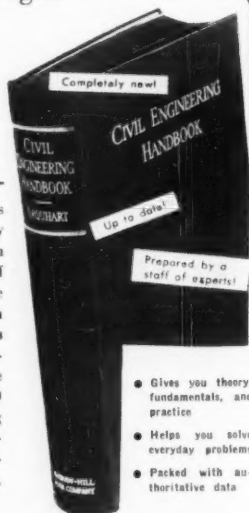
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(Continued from page 160)  
factory of the Gradall is transferred to a plant leased in New Philadelphia, Ohio.

### Production

**Hyatt Bearings Div.**—Raymond H. Cramer is appointed general manager of this division of General Motors.

**Koppers Co., Inc.**—George M. Carvlin is assistant general manager of the engineering and construction division succeeding Joseph van Ackeren, who has retired from active management.

**Wall Colmonoy Corp.**—R. L. Peaslee has joined the company as development engineer.

### Miscellany

**Fleming Mfg. Co.**—Has opened a bin and batcher division under the management of John F. Van Way.

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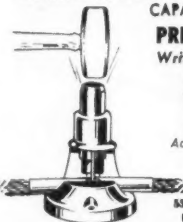
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The advantages offered you by STANOLUBE HD go hand in hand with the benefits of an automotive engineering service that's unique in the Midwest. The Standard Oil Company has

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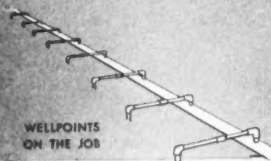
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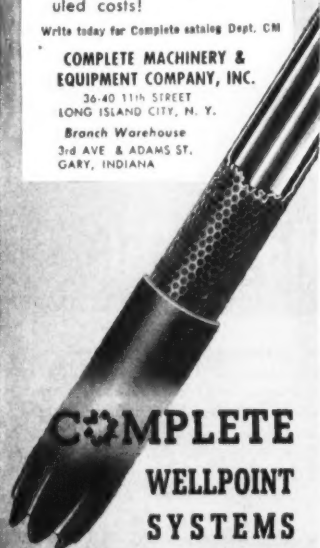
Pre-drainage with Complete Wellpoint Systems prevents trouble wherever subgrade water is a problem. By eliminating the water hazard, you usually eliminate any need for sheeting — you often are able to continue operations even in sub-zero weather — you frequently can use equipment which "wet grounds" would rule out — and you always can count on completion in scheduled time at scheduled costs!

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**PUSH PIPE**

**UNDER STREETS, WALKS,**

**TRACKS, FLOORS**



## ...with a GREENLEE PIPE PUSHER

Yes, here's the quick and simple way to install underground pipe. With a GREENLEE Hydraulic Pipe Pusher one man pushes pipe under obstacles. No tearing up of pavement, lawns, floors... eliminates extensive ditching as just a short trench accommodates the Pusher. No tedious tunneling, back-filling, tamping, or re-paving. Job time is cut to a fraction. Pusher often pays for itself through labor savings on the first job or two.



**No. 790 GREENLEE PUSHER**  
For 3 to 4-inch pipe. Six speeds—6,500 to 40,000 lbs. pushing pressure.



**No. 795 GREENLEE PUSHER**  
For pipe larger than 4-inch, concrete sewer pipe, large drainage ducts. Six speeds—25,000 to 150,000 lbs. pushing pressure.



**POWER PUMP** for both sizes of GREENLEE Pushers. Pushes pipe at rate of two feet per minute.



Get facts on timesaving Greenlee tools now. Write Greenlee Tool Co., Division of Greenlee Bros. & Co., 2188 Columbia Avenue, Rockford, Illinois, U. S. A.

# SEARCHLIGHT SECTION

EMPLOYMENT:  
BUSINESS:

"OPPORTUNITIES"

EQUIPMENT  
USED OR RESALE

## UNDISPLAYED

\$1.20 per line, minimum 4 lines. To figure advance payment count 5 average words as a line.

Individual Employment Wanted undisplayed advertising rate is one-half of above rate, payable in advance.

Box Numbers—Care of publication New York, Chicago or San Francisco office count as one line. Discount of 10% if full payment is made in advance for 4 consecutive insertions.

## RATES

Individual Spaces with border rules for prominent display of advertisement.

The advertising rate is \$9.50 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

An advertising inch is measured 1/8" vertically on one column, 3 columns—30 inches—to a page. New Advertisements received by August 23rd will appear in the September issue C.M.

## DISPLAYED

# 13,500 PONTOONS at a fraction of cost!

**FOR: Barges, Floating  
Bridges, Work Plat-  
forms, etc.**

Ready for immediate sale . . . 13,500 navy surplus steel constructed pontoons . . . all in excellent condition. Various sizes, but the majority 5'x5'x7' . . . cells are six to a string or single units . . . 1500 cu. ft. . . average 10 ton wt per unit. Types T-6B, T-7A, T-8 and T-11. Suitable for small craft, inland river barges, floating work platforms, oil, water and storage tanks. Write, wire or phone for prices.

## SCHNITZER

**STEEL PRODUCTS CO.**

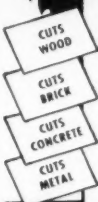
3200 NW Yeon, Portland, Ore.

Capitol 1821

**BRAND NEW  
FACTORY  
Surplus  
SALE!**  
PORTABLE  
MULTI-USE  
POWER  
SAW

**SAVE  
\$300  
WAS \$585.00  
NOW \$188.00**

FOR MINNEAPOLIS, MINNESOTA



America's greatest saw bargain! Cuts lumber to 4" thick, Briggs & Stratton 3 1/2 H.P. gas engine. Saw cuts flue lining, transite pipes, steel sheets, copper & aluminum, etc. Does work of \$1,000 worth of saw equipment. Sharpens tools. Famous make, brand new, original crates. Limited supply. Send for literature. Dept. CM8

AT 1281

**ENNIS SUPPLY CO.**

334 1st St. N., Minneapolis 1, Minn., U.S.A.

REPLIES (Box No.):  
Address to office nearest you:  
NEW YORK: 330 W. 42 St. (18)  
CHICAGO: 520 N. Michigan Ave. (11)  
SAN FRANCISCO: 68 Post St. (14)

## POSITION VACANT

ASPHALT FOREMAN — Experience, free to travel, familiar with Barber-Greene Paver. Contact Allegheny Asphalt & Paving Company, Inc., Pittsburgh, Pa. Hemlock 1-7740.

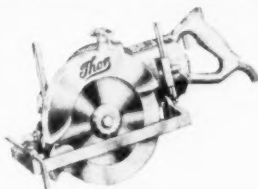
**GET NEW  
JOB FAST**

Certified copy famous "250,000 Job-Letter". All only \$1. Mail to JOB MASTERS, Rm. 1104, 118 E. 40 St., New York, N. Y.

**SUBMERGED PIPE LINE  
CONSTRUCTION  
BOYCE COMPANY**

Phone 3-2530 Clearwater, Fla.

**Thor ELECTRIC  
SAWS**  
LIMITED SUPPLY • ORDER NOW  
BRAND NEW! — GUARANTEED!



Capacity 2 1/2"—ball bearings throughout. Adjustable for depth or bevel cutting to 45° 110 Volts, Universal—3500 r.p.m.—21 1/2 lbs.

## EQUIPMENT

One combination rip-crosscut blade—wrench—steel carrying case—10 ft. cord and plug—tube of lubricant.

**SPECIAL PRICE NOW \$8500**

WAS \$147.50

SAVE \$62.50

F.O.B. CHICAGO

TERMS: Cash With Order or C.O.D.

Saws are guaranteed to be new as represented.

**1ST NATIONAL LIQUIDATORS, INC.**  
190 W. Randolph St., Chicago, Ill.

Distributors for the complete line of Thor Electric Tools. Saws-Hammers-Drills-Screw Drivers-Nibblers-Impact Wrenches. A complete catalogue and price list mailed upon request.

**Need  
STEEL SHEET  
PILING?**  
**RENT IT!**  
**"Faster From Foster"**

ALL LENGTHS, ALL SECTIONS  
Also Corrugated Steel Piling

GUARANTEE: All material rigidly inspected before shipment—if upon your inspection it is not exactly as represented—it is returnable, freight both ways, at our expense.

RATES • TRUCK ACCESSORIES • PILING • WELD SHOP  
**L B FOSTER CO.**

## D7 TRACTORS No. 12 MOTOR GRADER

Late Model "Caterpillar" No. 12 Motor Grader. Serial No. 87459 equipped with 13:00 x 24 Tires front and rear. Been used less than 3,000 hours.

"Caterpillar" D7 Tractor, Serial No. 4T5401, equipped with LeTourneau Tiltadozer, and Double Drum Power Control Unit. Recently overhauled and in excellent running condition.

"Caterpillar" D7 Tractor, Serial No. 3T4796, equipped with late model "Caterpillar" Dozer and "Caterpillar" Control Unit. Has nearly new rails and shoes.

**WM. N. HANDLEY  
RICHMOND, MISSOURI**

## FOR SALE

50 ton Rogers Low Boy Carryall, like new. Less than 2,000 miles of use. Long goose neck for tandem wheel tractor. Will deliver.

**ED. LOVELAND**

East Main St. Phone 2697 Geneva, Ohio

## WANTED TO BUY

**8 OR 10 IN. SUCTION DREDGE**

Shallow Draft, complete with accessories. Write

**HUDGINS & ALFONSO, INC.**  
RAMROD KEY P.O. FLORIDA

# FASTER BETTER SOIL COMPACTION



Specified densities are quickly reached in granular soils with the Jackson Vibratory Soil Compactor. For those areas adjacent to structures, bridges, culverts, trenches, factory floors and earth fill dam construction there is nothing that begins to equal the Jackson Compactor for speed, convenience and thoroughness of compaction. Self-propelling, the operator merely guides it. Send us a sieve analysis or small sample of the soil and we will tell you what you can expect in percentage of A.A.S.H.O. densities and depth of compaction.

## JACKSON MOST PRODUCTIVE OF ALL SCREEDS

for

BRIDGE DECKS  
ROAD WIDENING  
MUNICIPAL PAVING  
ALLEY PAVING  
HIGHWAY PATCHING  
and OTHER JOBS



### CROWNS—(Any Type)—INVERTS—UNDERCUTS

With the Jackson electric Vibratory Hand Screed (powered by a Jackson 1.25 KVA Portable Power Plant) it is possible to eliminate center construction joints and pour full widths up to 30 ft. And it is the only screed that can be rolled back (on 4 rollers) for second passes. Screed is furnished with all hardware, cable, shoes, rollers and vibratory motor attached to an 8 ft. plank. The contractor has only to provide himself with a plank of suitable length, specified crown, and then transfer the hardware to be set for any particular use. Screed has strong tendency to propel itself forward and requires only two men on any width slab.

### FOR SALE OR RENT

The above equipment as well as many other time and money-saving Jackson vibrators are for sale or rent at your Jackson Distributor. See them there or write for handy "POCKET GUIDE" to the Jackson line.

**ELECTRIC TAMPER & EQUIPMENT CO. Ludington, Mich.**

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# POZZOLITH CONCRETE HERE . . .



Reading Railroad Co., Bridge, Across Schuylkill River, Reading, Pa. Private Plans.  
Contr.—Empire Construction Co., Baltimore, Md. Pozzoloth Ready-Mixed Concrete  
supplied by Reading Ready-Mix Concrete Co., Reading, Pa.

In addition to producing the easy placeability and good cohesiveness required for this pumped concrete job, Pozzoloth, cement dispersion, provided these important advantages:

1. REDUCED PLACING COSTS
2. LOW PERMEABILITY
3. GREAT DURABILITY

Pozzoloth, Cement Dispersion, conforms with the water-cement ratio law — basis of ACI (613-44) and ASTM (C94-48) methods for concrete design, specification and production. Pozzoloth produces required concrete properties at lowest cost.

*Write for further information and Pozzoloth booklet.*

*the*

# MASTER



# BUILDERS

*la*

CLEVELAND 3, OHIO

TORONTO, ONTARIO

# New Lorain-50 "Series" revolves on new TIMKEN® cone rollers

**F**OUR cone rollers in the new Lorain-50 "Series" of power shovels and cranes carry the weight of the entire upper structure including the bucket load.

The cone rollers are a new development of the Timken Company and assure a free, easy swing when the turntable revolves. Each cone roller is a complete Timken® tapered roller bearing—with inner races, rolls, cages, and outer race. It is the cone-shaped outer race of the Timken bearing itself upon which the turntable revolves. And like conventional Timken tapered roller bearings, the cone rollers take radial

and thrust loads, have extra load carrying capacity and keep maintenance to a minimum.

Timken bearings take any combination of radial and thrust loads because of their tapered design. Line contact between rolls and races gives extra load-carrying capacity. And thanks to their true rolling motion and incredibly smooth surface finish, Timken bearings virtually eliminate friction. Shafts are held in positive alignment, reducing wear on surrounding parts.

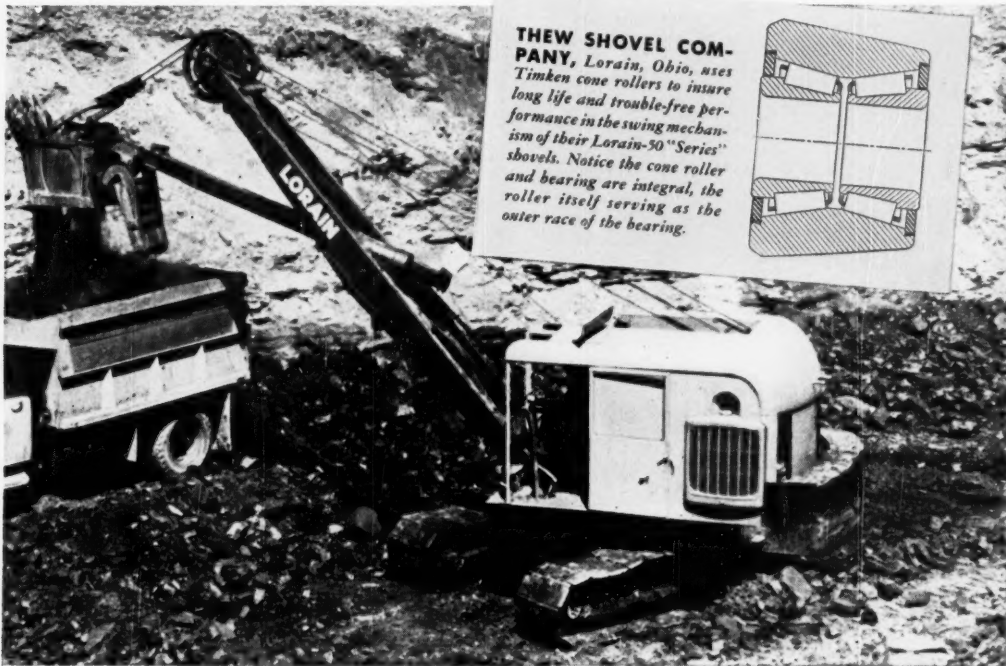
Normally, Timken bearings last the life of the machine because they are (1) engineered for the job, (2)

are made of Timken fine alloy steel, (3) are precision manufactured.

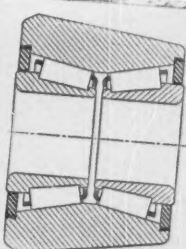
No other bearing offers *all* the advantages you get with Timken bearings. They have more than fifty years of bearing research and development behind them. Insist on Timken bearings in the machines you buy or build. Look for the trademark "Timken" on every bearing. The Timken Roller Bearing Company, Canton 6, Ohio. Cable address, "TIMROSCO".



*This symbol on a product means its bearings are the best.*



**THE SHovel COMPANY, Lorain, Ohio,** uses Timken cone rollers to insure long life and trouble-free performance in the swing mechanism of their Lorain-50 "Series" shovels. Notice the cone roller and bearing are integral, the roller itself serving as the outer race of the bearing.



"BE SURE TO VISIT US AT  
THE METAL MINING CONVENTION  
AND EXPOSITION,  
SALT LAKE CITY, UTAH  
BOOTH 33"

**TIMKEN**  
TRADE MARK REG. U.S. PAT. OFF.  
**TAPERED ROLLER BEARINGS**



NOT JUST A BALL ○ NOT JUST A ROLLER □ THE TIMKEN TAPERED ROLLER □ BEARING TAKES RADIAL AND THRUST ——— LOADS OR ANY COMBINATION